

Cloud Survey for Developers

Scott Reed

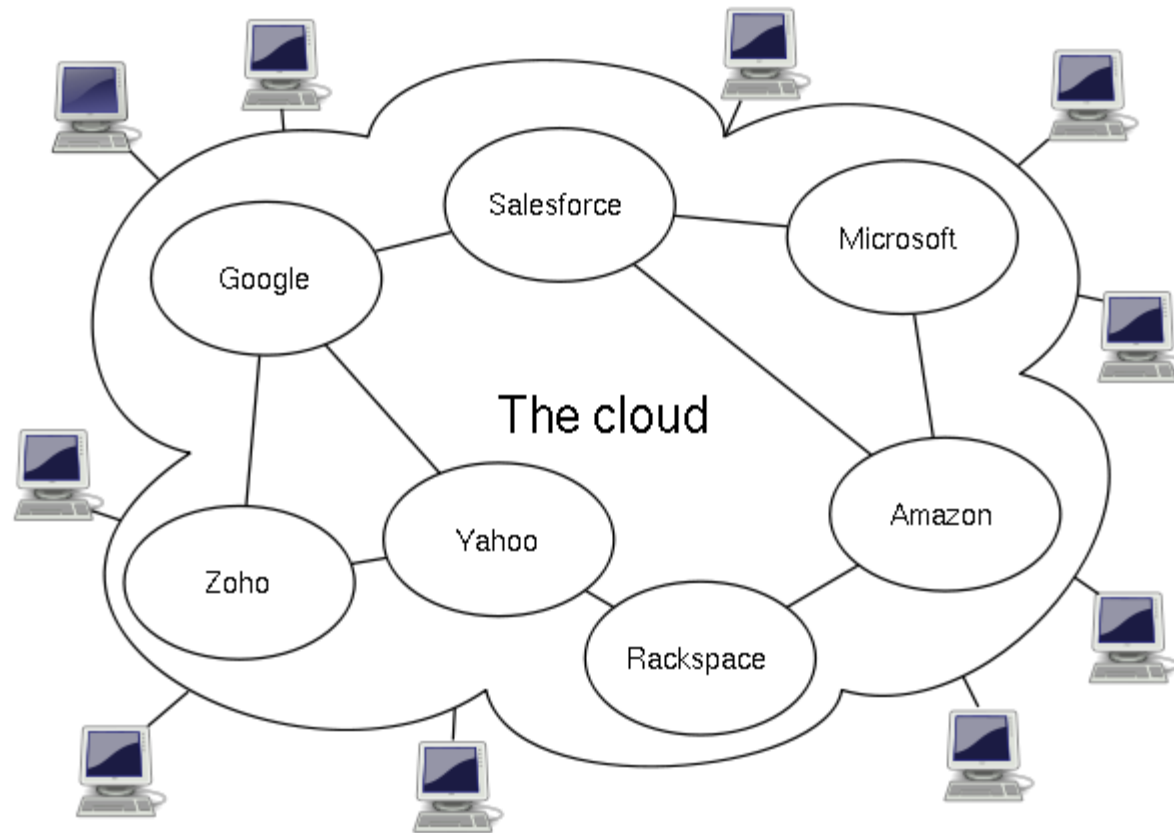
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What is the Cloud?



Why Cloud Computing?

- Its all about “scalability”
- Economies of scale
- Capital expenses to operating expenses
- Reduces risk of over/under provisioning
- Eliminates up front commitment
- Enables short term usage of vast resources
- Makes scaling simpler



4 Business Cases

- **Time Bound / On and Off**
- **Steady Growth**
- **Predictable spikes**
- **Unpredictable spikes**

- (<http://calculator.s3.amazonaws.com/calc5.html>)
- (<http://www.microsoft.com/windowsazure/tco/>)

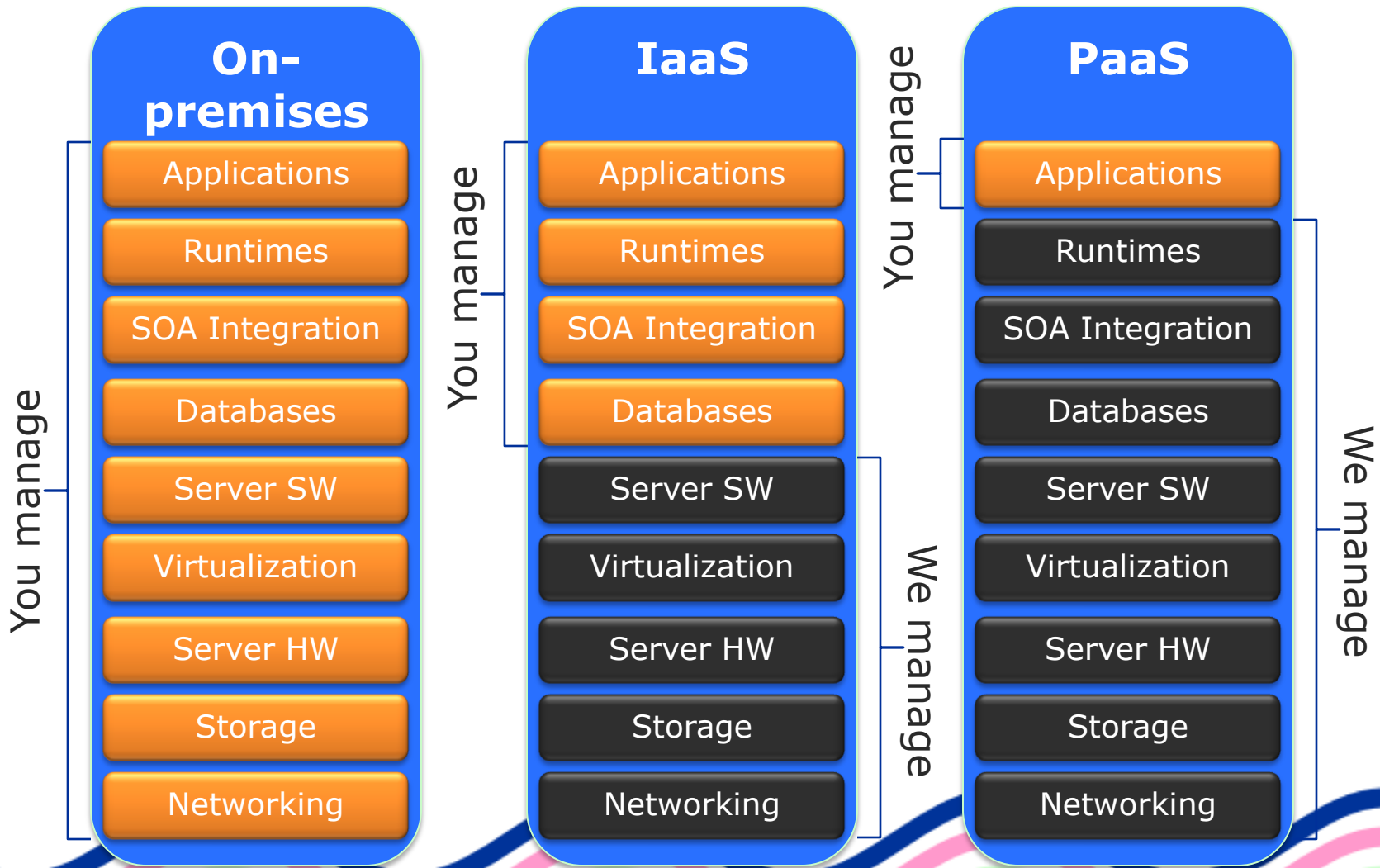


Cloud Tradeoffs

- On Premises
 - **Control**
 - Customizability
 - Firewall security/Privacy
 - Share and reuse
 - Data consistency
- Cloud
 - **Economy of Scale**
 - Ease of Provisioning
 - Global Reach
 - Partitioning/Redundancy
 - Data availability



As A Service



Amazon

- One of the first, clearly the market leader
- Wide variety of services
 - both SOAP and REST
- <http://aws.amazon.com/>
- <http://calculator.s3.amazonaws.com/calc5.html>



Amazon Web Services

- **Elastic Cloud Computing (EC2)**
 - Infrastructure as a service
 - Elastic IP, Virtual Private Cloud additions
- **Variety of Storage options**
 - Simple Storage Service (S3) (Blobs)
 - SimpleDB (Entities)
 - Simple Queuing Service (SQS) (Queues)
 - Relational Data Service (RDS) (MySQL)
 - Elastic Block Storage (EBS) (File system)



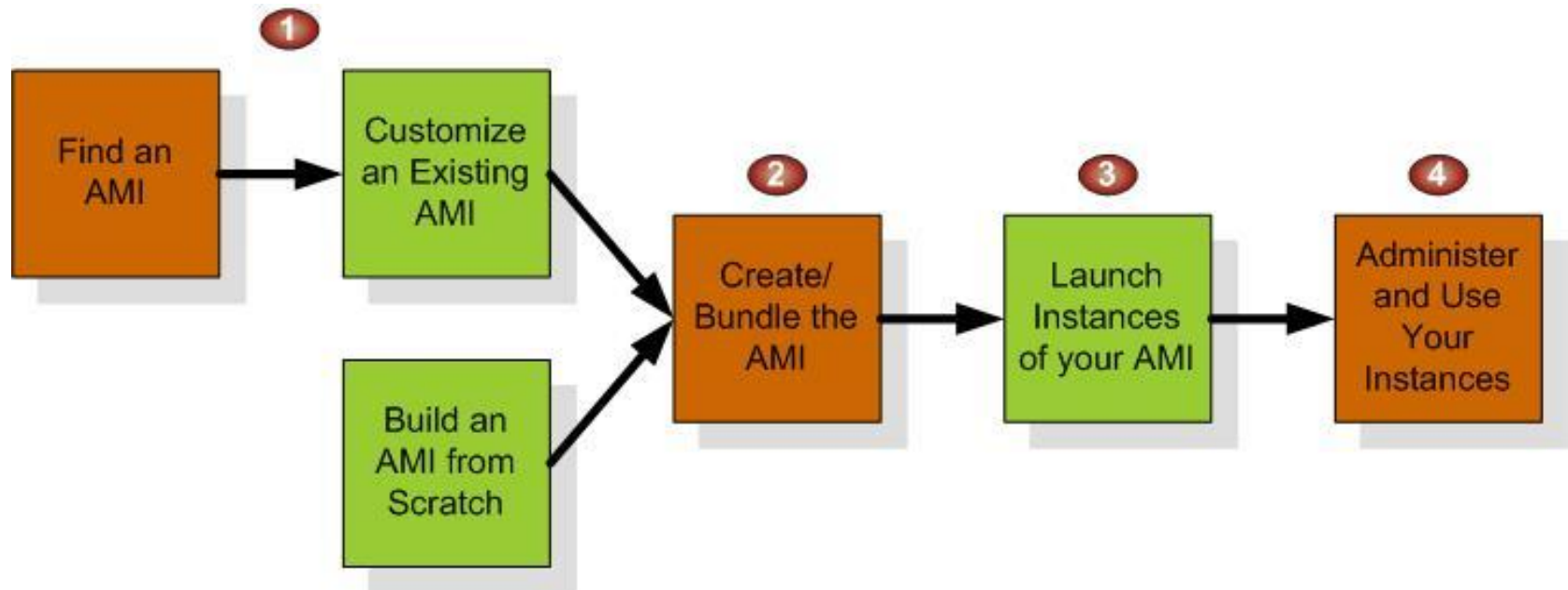
Amazon EC2

- **Three regions (Northern Virginia, Northern California, and Ireland)**
- **Linux, Windows (also w/ SQL) flavors**
- **On Demand, Spot or Reserved types**
- **Elastic IP Addresses**
- **Elastic Load Balancing**
- **Elastic Block Store ***
- **CloudWatch* w/ AutoScale**



Amazon EC2

- Instance workflow

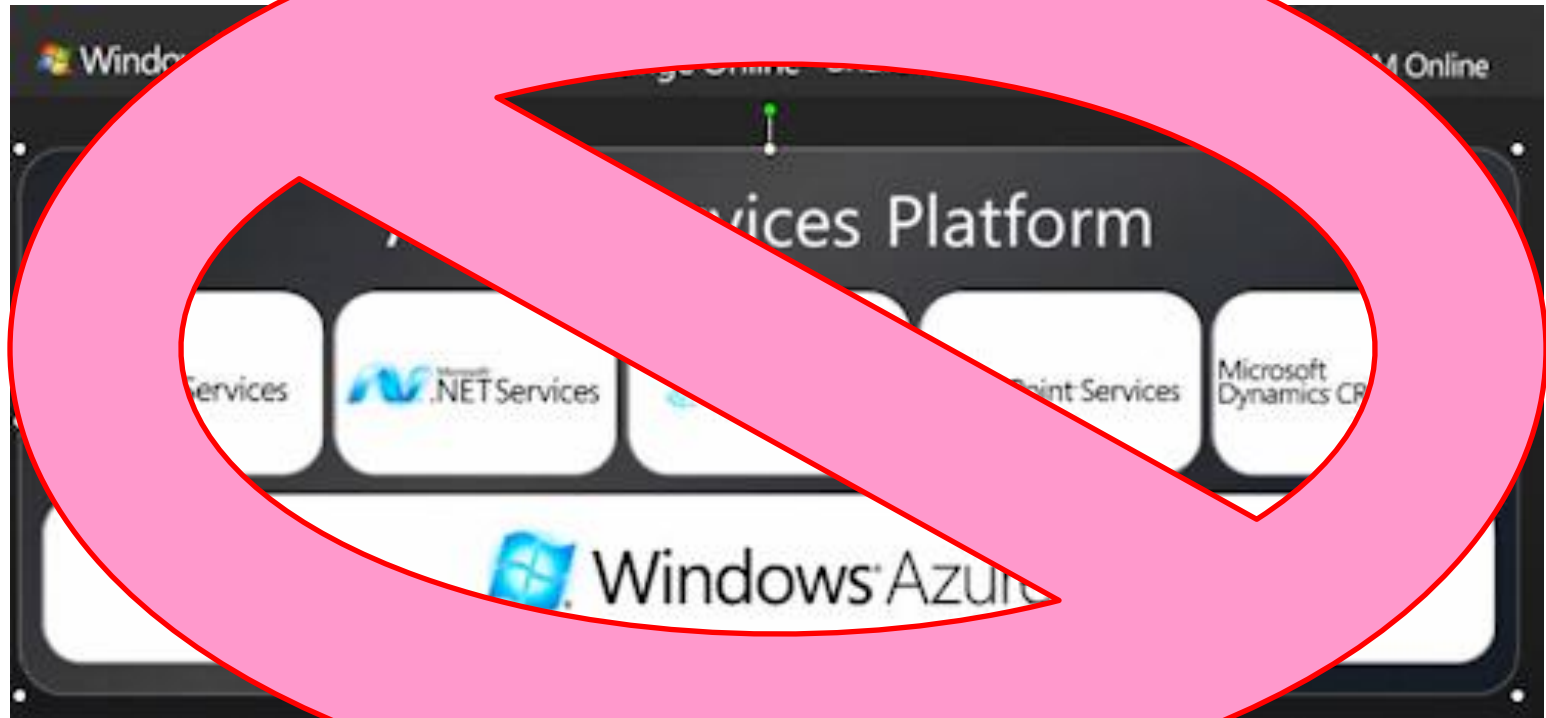


Microsoft

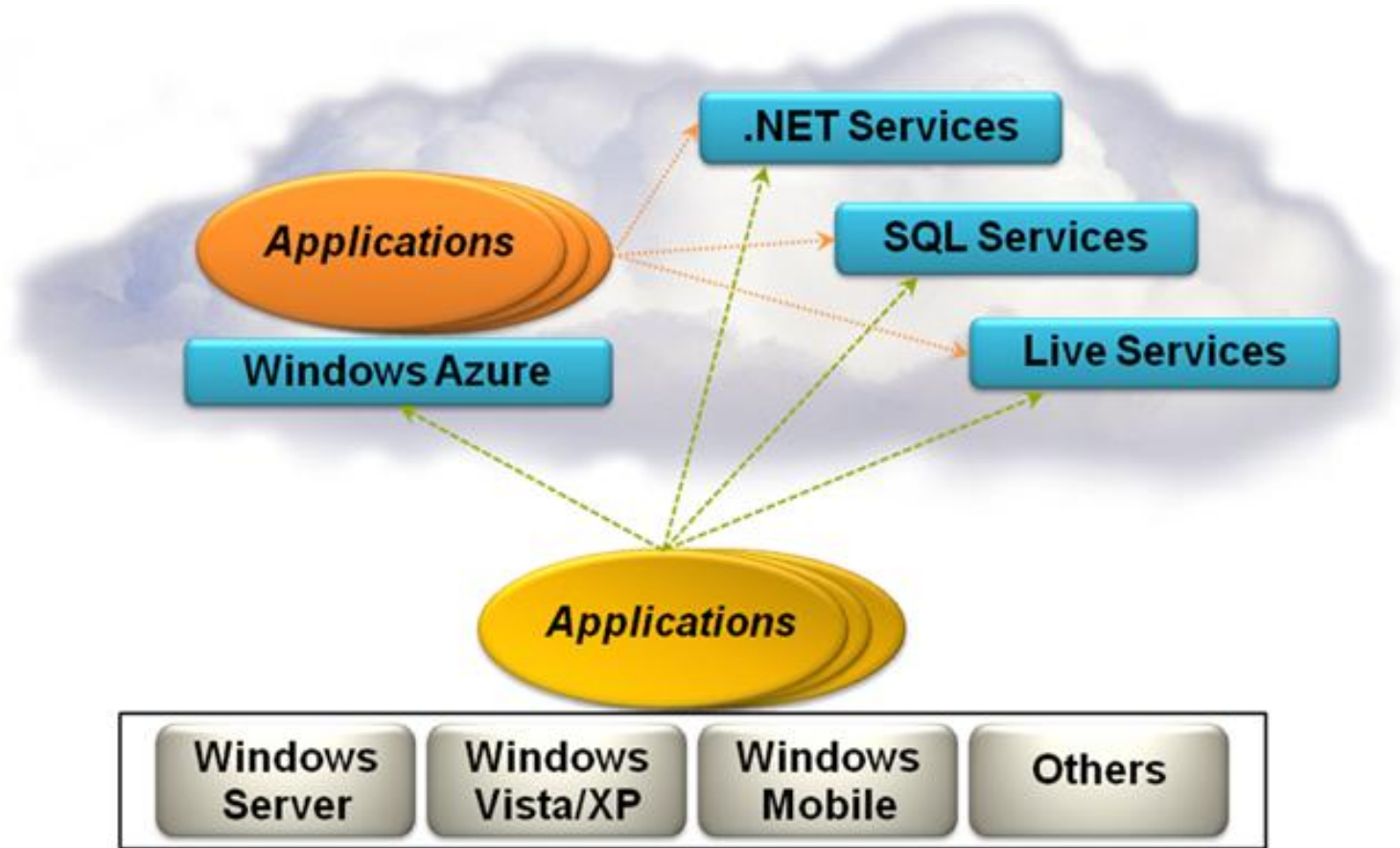
- Late to the game (PDC 2008), but catching up
- Platform as a service
 - Hides nitty gritty details
- <http://windows.azure.com>
- <http://www.microsoft.com/windowsazure/tco>
- DevFabric - local version of Azure for testing



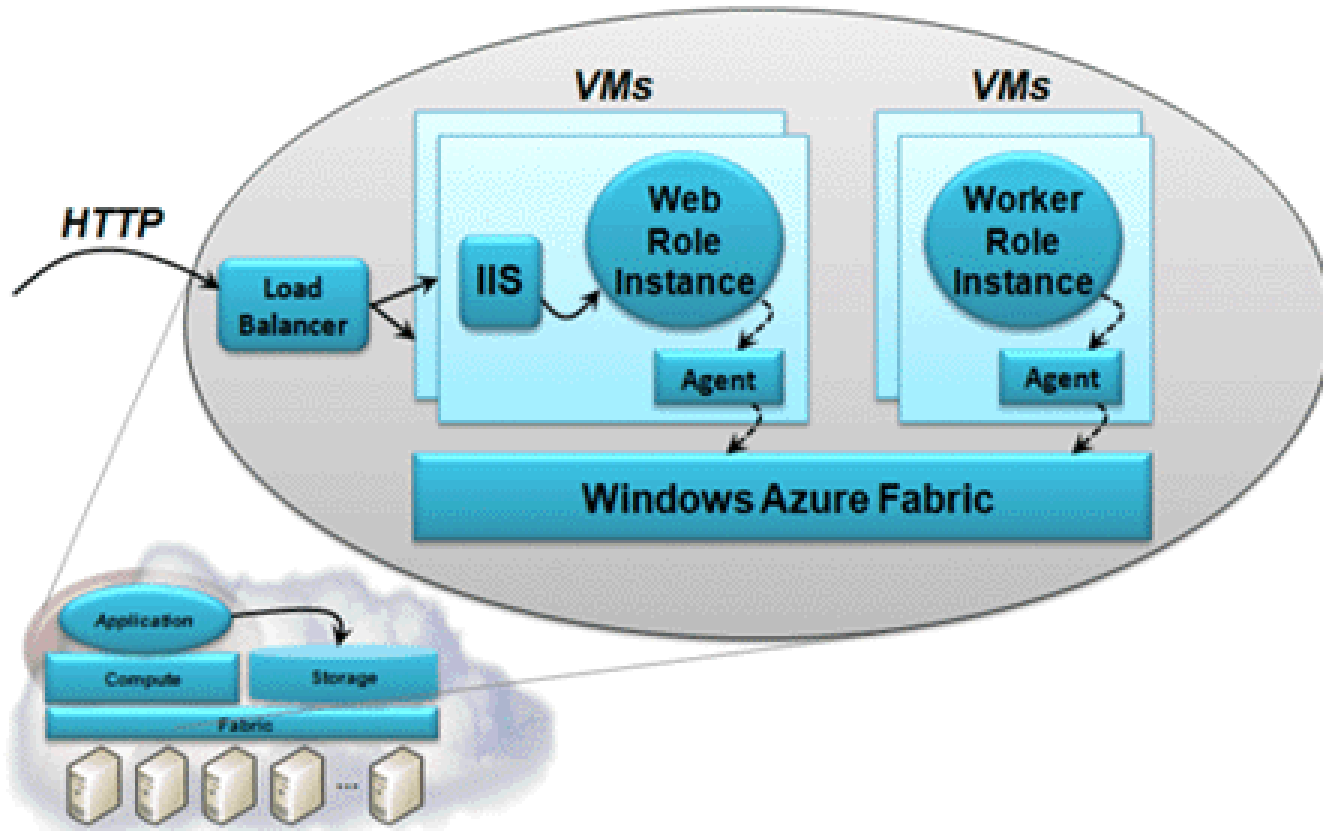
Microsoft Azure



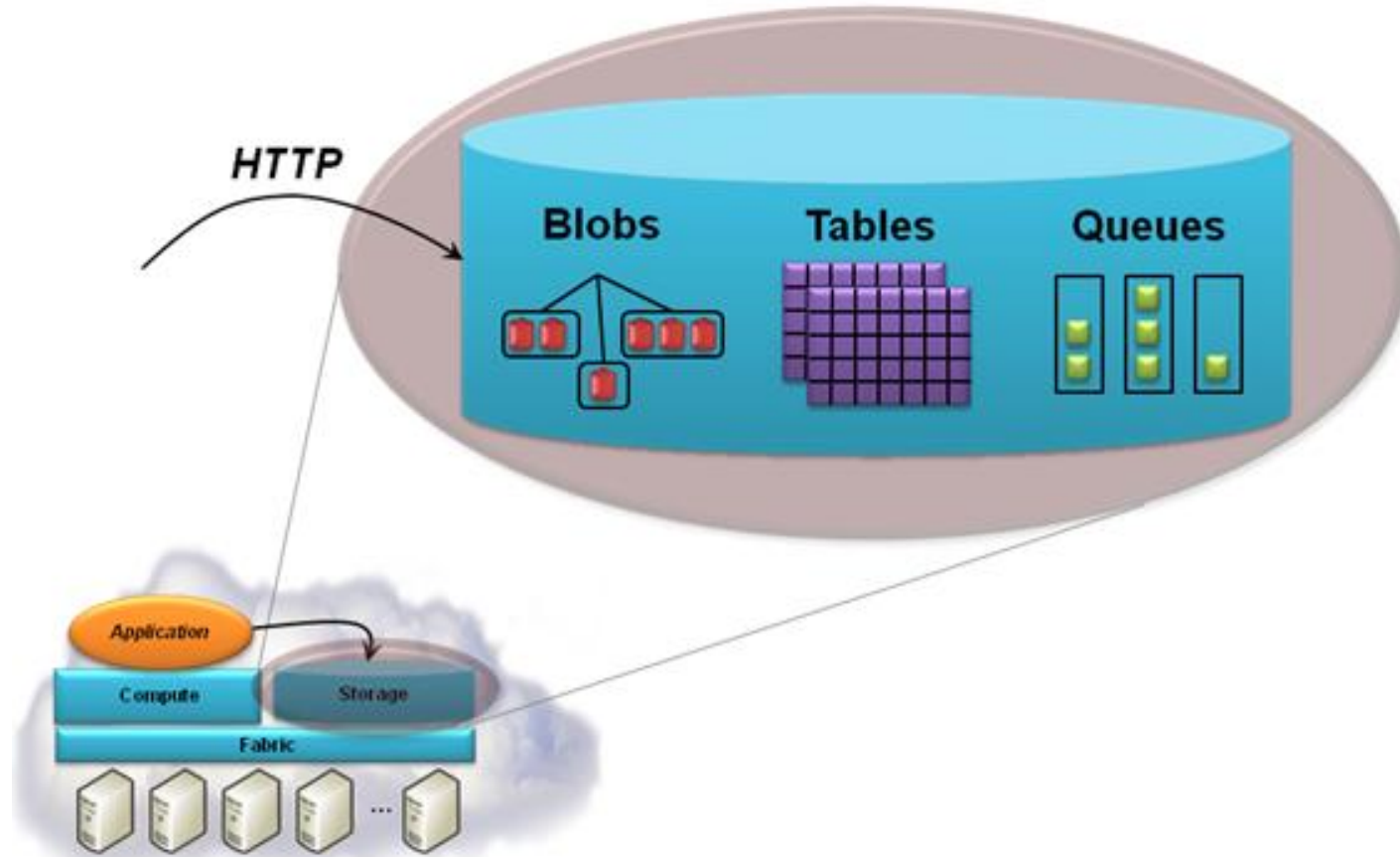
Azure Platform



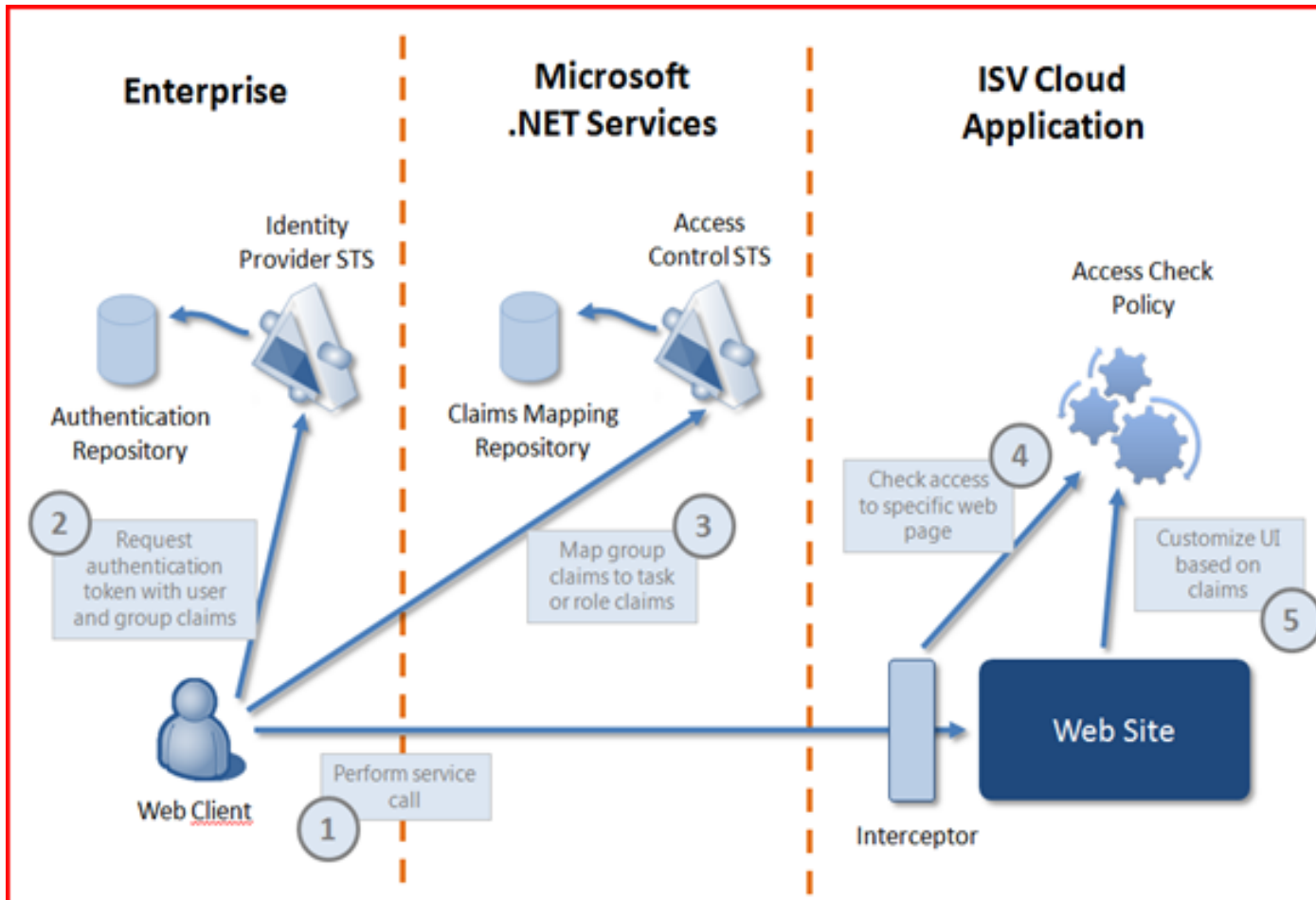
Azure



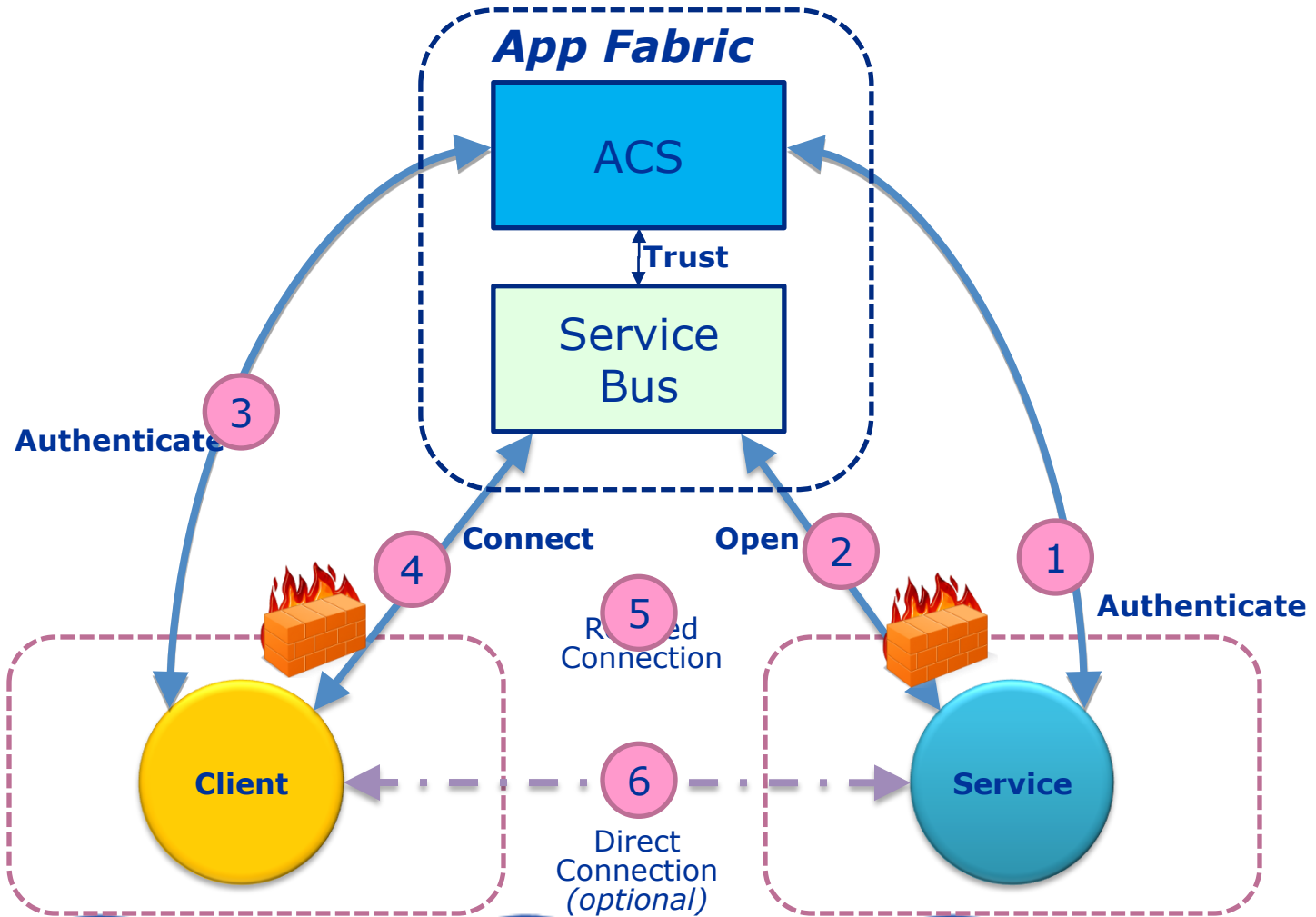
Azure Storage



Access Control Service



Service Bus



SQL Azure

- **Relational DB in the cloud**
- **1GB to 10GB in size**
- **Migrate your data (subset of T-SQL allowed)**
- **Simply change your connection string**



Google App Engine

- **First Beta in April 2008**
- **Easier and less control than Amazon or Microsoft**
- **Offers FREE limited usage model**
- **Python or Java supported**
- **No relational DB option**
- **Cron jobs for administration**
- **Eclipse plugin and AppLauncher available**



Others

- **Rackspace**
- **VMWare**
- **Salesforce**
- **GoGrid**
- **Joyent**
- **etc...**



References

- http://en.wikipedia.org/wiki/Cloud_computing
- <http://www.eecs.berkeley.edu/Pubs/TechRpts/2009/EECS-2009-28.pdf>
- <http://www.slideshare.net/davidcchou/microsoft-cloud-services-architecture-presentation>
- http://www.davidchappell.com/Azure_Services_Platform_v1.1--Chappell.pdf
- <http://blogs.msdn.com/eugenio>



Resources

- <http://aws.amazon.com/>
- <http://microsoft.azure.com/>
- <http://appengine.google.com/>



Thank You



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