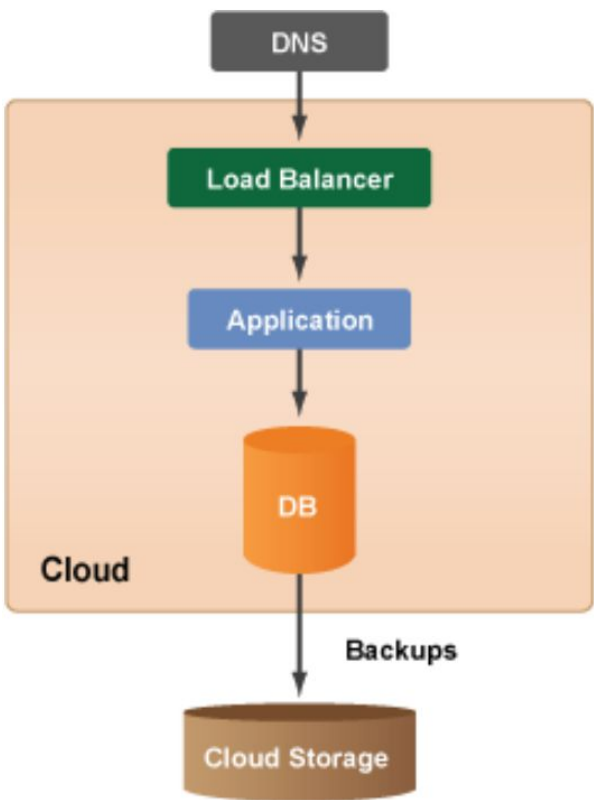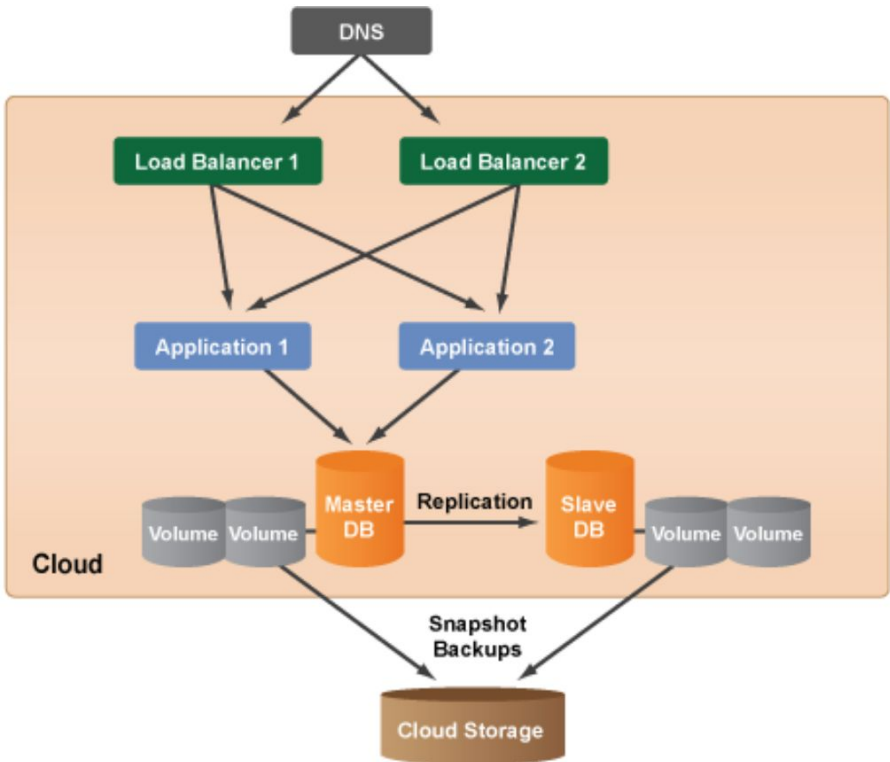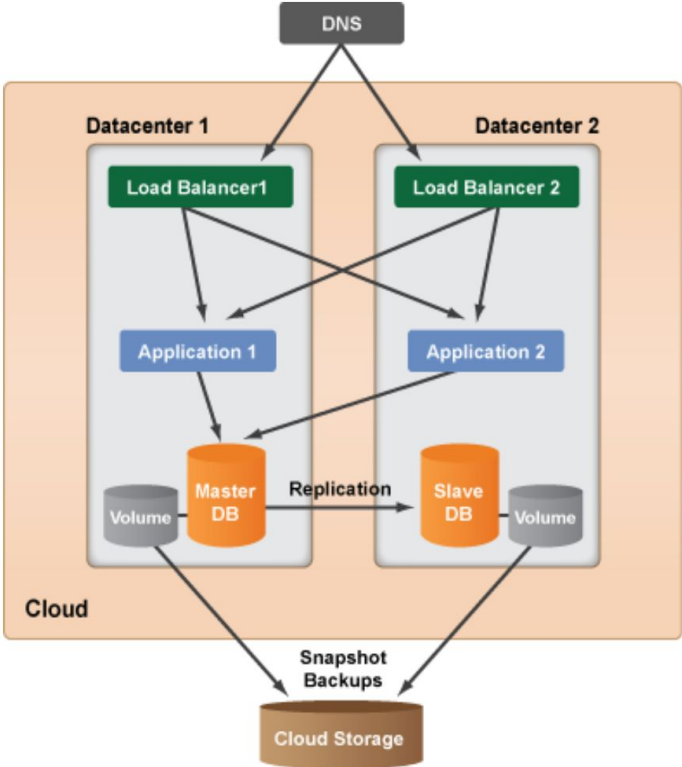# Single:

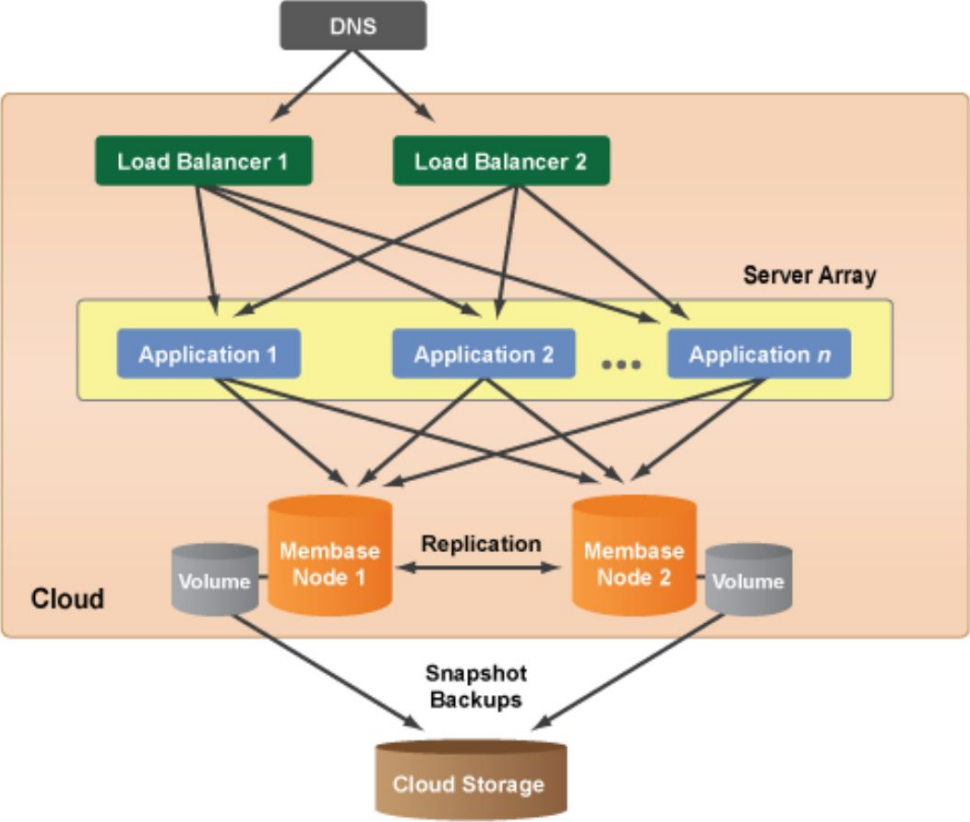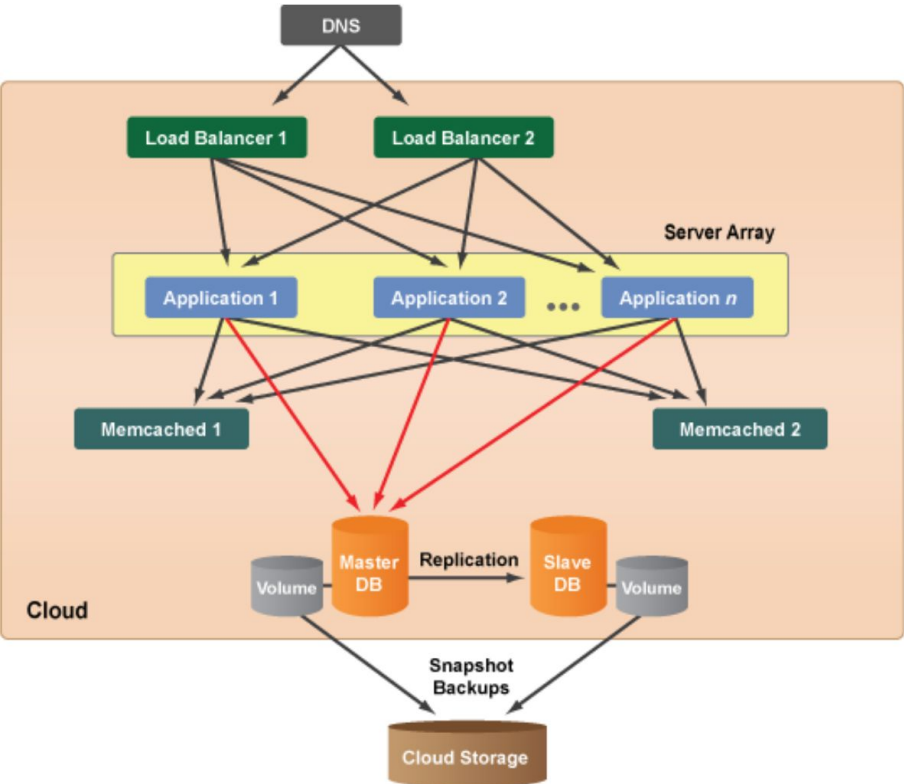# Redundant 3-tier app:

Multi Data Center:

Scalable Architecture with Membase:
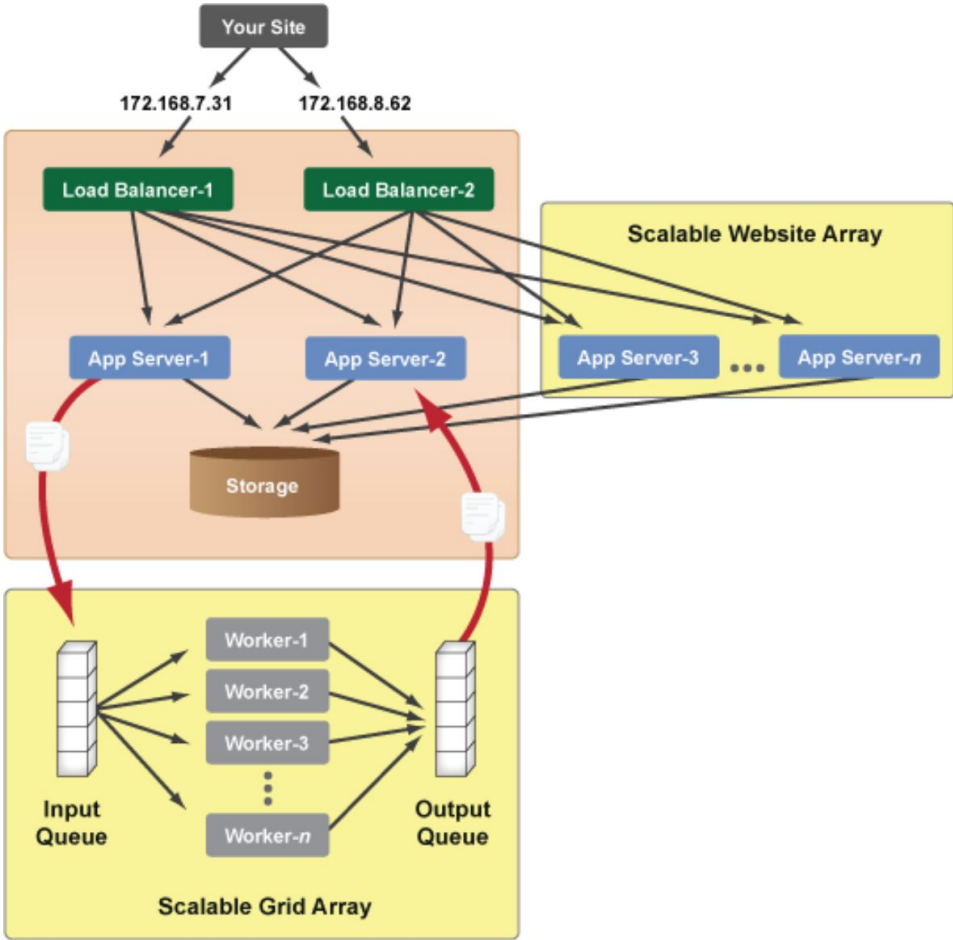
Scalable Multi-Tier Architecture with Memcached:

Alert-based & Queue-based Scalable:

Scalable MultiCloud Architecture:
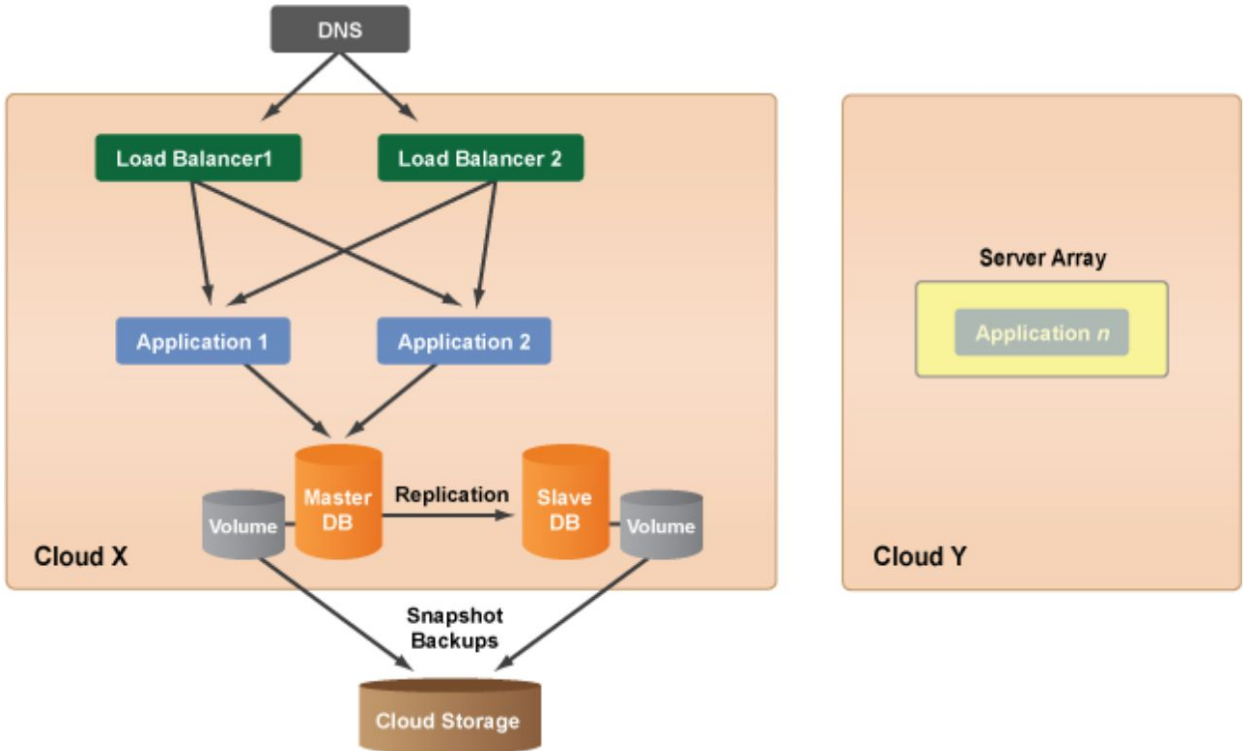
Failover MultiCloud Architecture
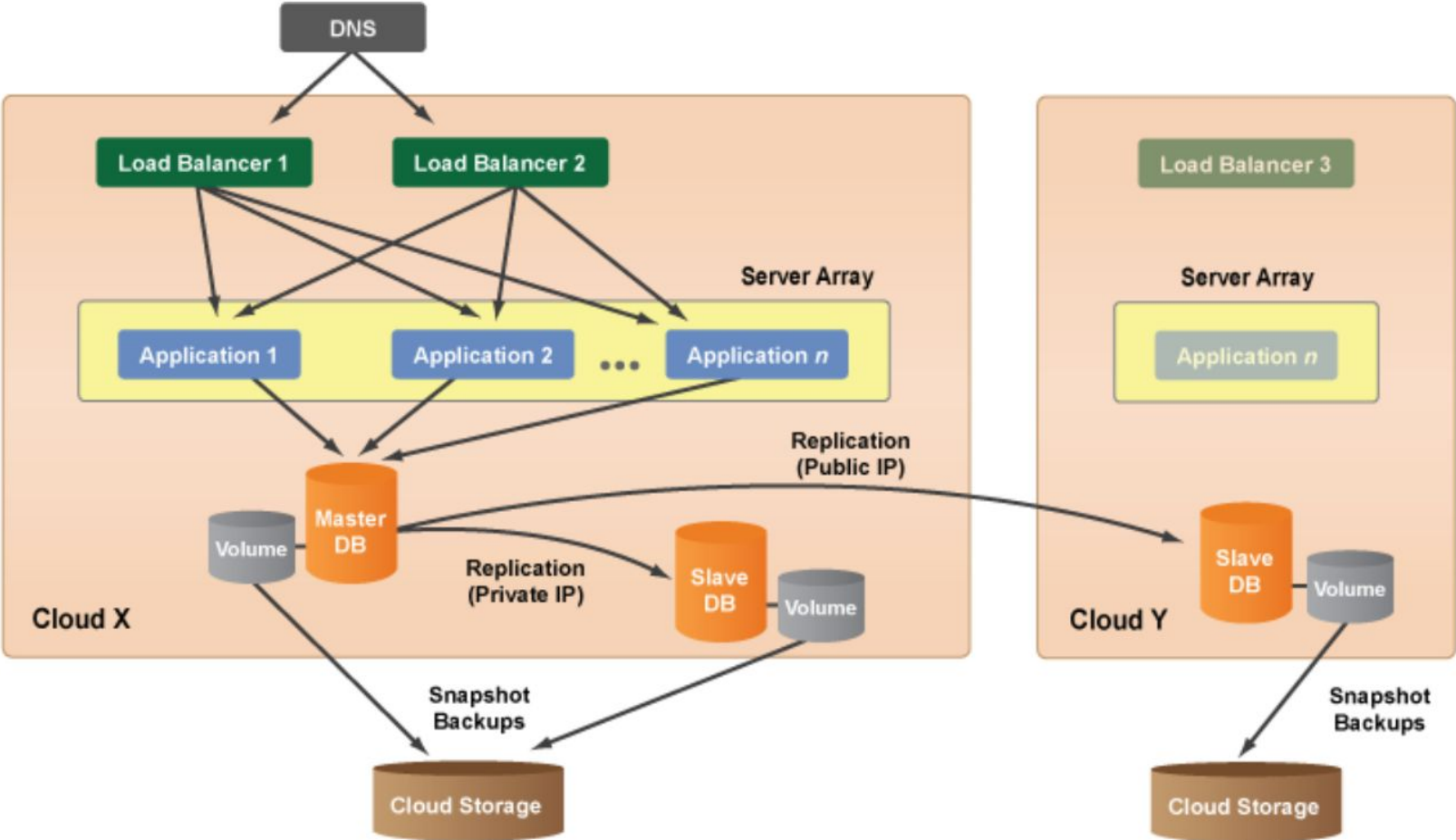
MultiCloud Disaster Recovery Architecture
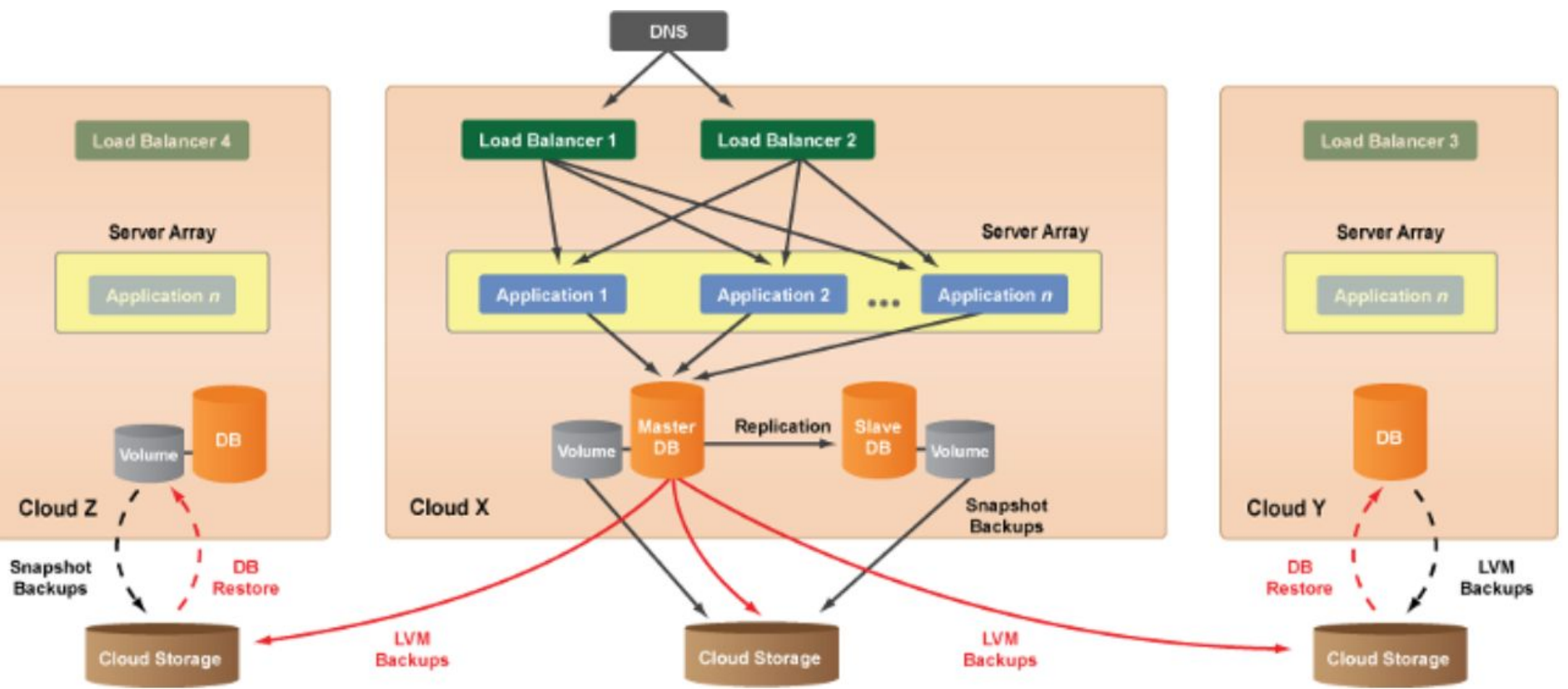
Diagramas de arquitecturas comunes:

Fuente:
https://docs.rightscale.com/cm/designers_guide/cm-cloud-computing-system-architecture-diagrams.html

Kubernetes & Containers
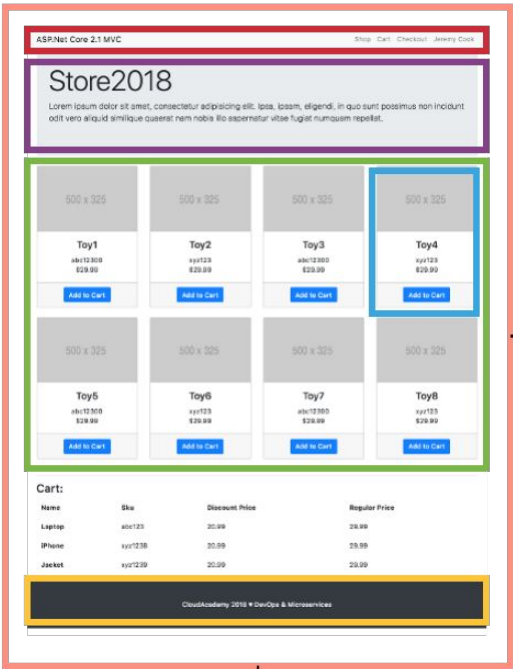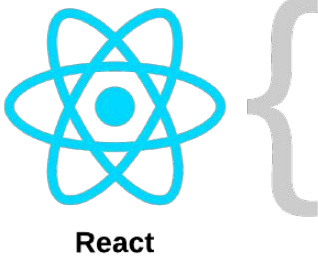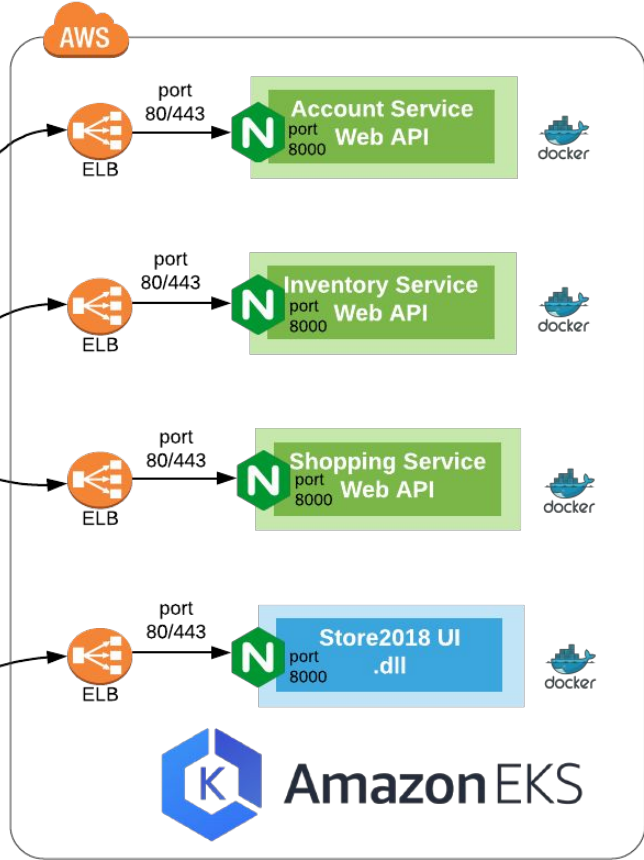
Instagram

2010 — THE BEGINNING — 1 DAY - 25,000 USERS

2012 — THE TIPPING POINT — 2 YEARS - 30 MILLION USERS

2015 — THE SCALE — 5 YEARS - 400 MILLIONS USERS

Instagram's Stack
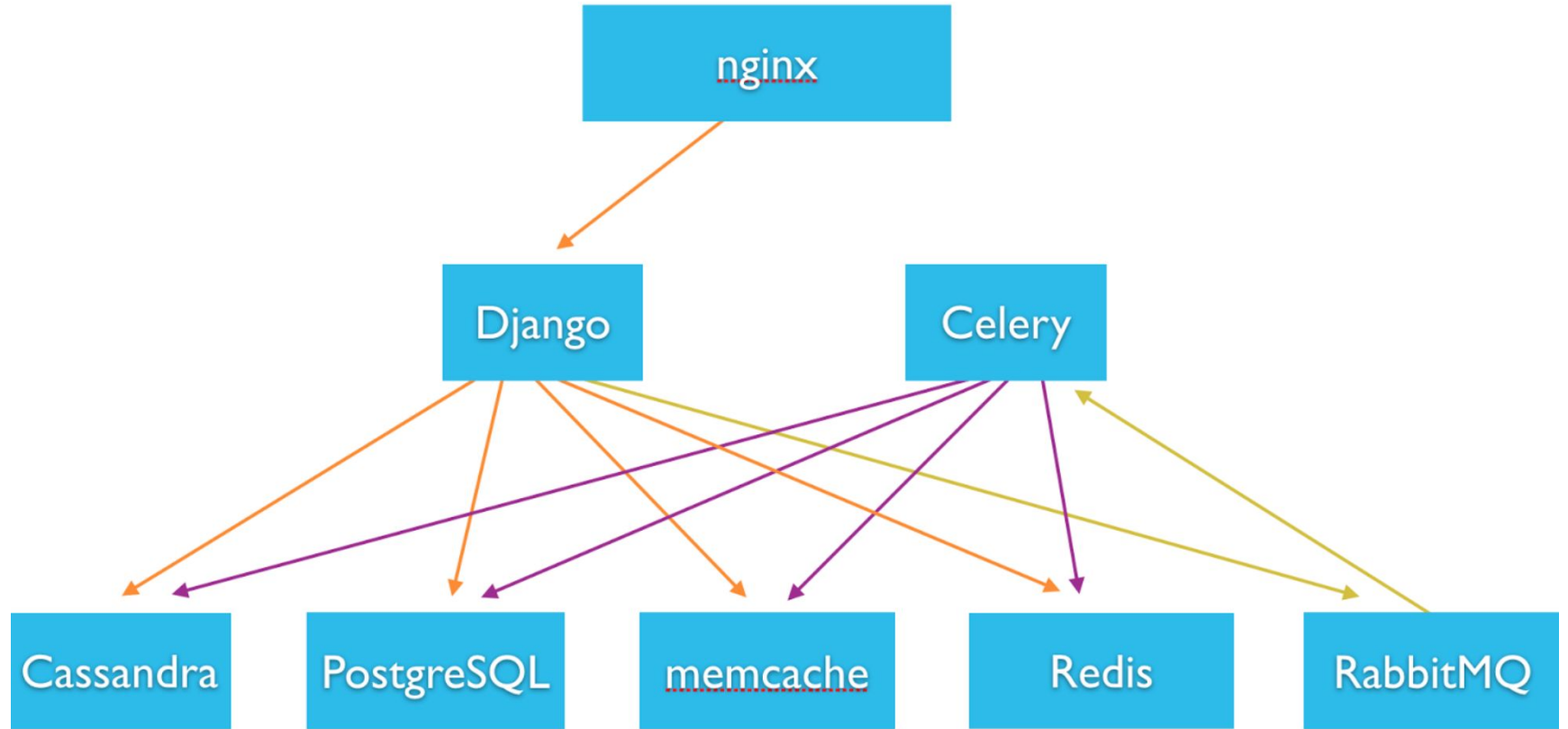
Nginx

es un servidor web de código abierto que, desde su éxito inicial como servidor web, ahora también es usado como proxy inverso, cache de HTTP, y balanceador de carga.

Django
Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design.

Celery
Celery is a task queue implementation for Python web applications used to asynchronously execute work outside the HTTP request-response cycle.

Apache Cassandra

database is the right choice when you need scalability and high availability without compromising performance. Linear scalability and proven fault-tolerance on commodity hardware or cloud infrastructure make it the perfect platform for mission-critical data. Cassandra's support for replicating across multiple datacenters is best-in-class, providing lower latency for your users and the peace of mind of knowing that you can survive regional outages.

Posgre

PostgreSQL is a general purpose and object-relational database management system, the most advanced open source database system.

Memcached

es un almacén de datos en la memoria de alto rendimiento y fácil de usar. Ofrece una solución de código abierto, escalable y completamente desarrollada con tiempos de respuesta inferiores a un milisegundo, muy útil para el almacenamiento en caché o los almacenes de sesión. Memcached es una opción muy común para impulsar las aplicaciones en tiempo real en la Web, aplicaciones móviles, juegos, tecnología publicitaria y comercio electrónico.

Redis

is an open source (BSD licensed), in-memory data structure store, used as a database, cache and message broker. It supports data structures such as strings, hashes, lists, sets, sorted sets with range queries, bitmaps, hyperloglogs, geospatial indexes with radius queries and streams

RabbitMQ
 es un software de negociación de mensajes de código abierto, y entra dentro de la categoría de middleware de mensajería.

Fuentes:

https://medium.com/@DataStax/instagram-engineerings-3-rules-to-a-scalable-cloud-application-architecture-c44afed31406

https://instagram-engineering.com/instagration-pt-2-scaling-our-infrastructure-to-multiple-data-centers-5745cbad7834#.ph5a69hni

https://mlsdev.com/blog/70-how-to-develop-an-app-like-instagram

Application and Data

React	**React Native**	**Python**	**JavaScript**	**Java**
Javascript UI Library	Cross-Platform	Language	Language	Language
nginx	**PostgreSQL**	**Redis**	**Django**	**Redux.js**
Web Server	Database	In-Memory Database	Framework (Full Stack)	Management Library
Objective-C	**GraphQL**	**Memchached**	**Cassandra**	**Gunicorn**
Language	Query Language	Database	Database	Webservers
Immutable.js	**Gearman**			
JS Utility & Library	Message Queue			

DevOps

Webpack	**Babel**	**Sentry**	**HAProxy**	**Jest**
JS Build Tool	JavaScript Compiler	Exception Monitoring	Load Balancer Reverse Proxy	JS Testing Framework
Fabric	**Nuclide**			
Server Configuration and Automation	IDE			

Instagram

Facebook

LAMP Stack: Linux, apache, Mysql, Php

Front-End: React
Cache: Memcached,
Databases: Cassandra, mysql,
Loggin: Scribe
Data analysis: hadoop
Http technologies: varnish

Fuentes:
https://royal.pingdom.com/the-software-behind-facebook/

Diagramas de arquitecturas comunes:

Fuente:
https://docs.rightscale.com/cm/designers_guide/cm-cloud-computing-system-architecture-diagrams.html