

Multi-region Deployment

A resilient and stable IT infrastructure for businesses having presence in multiple countries or planning to expand globally

Background

For companies with presence in multiple countries or planning to expand globally, having a flexible IT architecture is essential for business growth. Such companies need high stability and superior quality of networks to keep pace with technology and changing demands. The primary issue for such companies is the critical need for an efficient and secure network to connect their sites around the world. Leased lines from telecom carriers is a costly option for small or mid-sized enterprises.

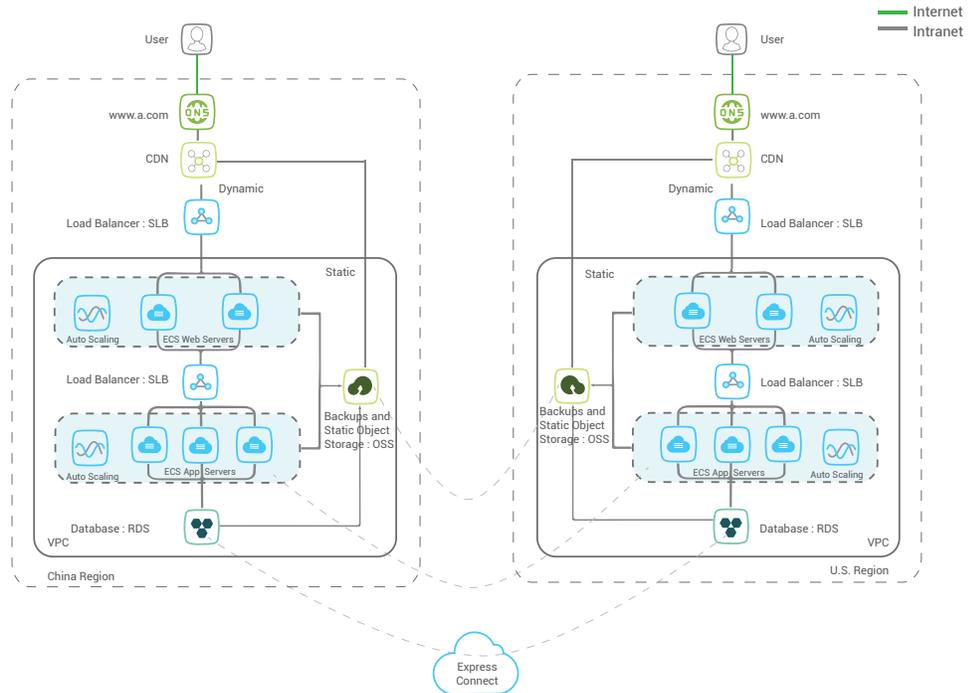
Highlights

-  Multi-region deployment
-  Cross-region data synchronization
-  Cross-border interconnection

Benefits

- ✓ Minimal latency by integration of multiple cross-region data centers into a single network
- ✓ No cost overheads for maintenance and management of lease lines
- ✓ Cross-region data synchronization in real time

Recommended Solution Architecture



1. User request is received and served by the nearest DNS server, and automatically routed to the CDN for accelerated content delivery.
2. The request is then sent to the mapped Server Load Balancer, which distributes incoming application traffic among multiple ECS instances in a round robin manner.
3. To scale servers based on real-time traffic demands, auto scaling service is configured on web servers and application servers. This service ensures that servers are automatically added or removed from SLB and RDS whitelists.
4. By adding a cache layer and read-only database instances, the most queried data will be retained in the cache and read requests will be evenly distributed across scalable read-only database instances.
5. To store and manage relational data, application servers are connected to ApsaraDB for RDS databases. RDS is provisioned in master-slave manner to provide high I/O performance with no single-point-of-failure. A Memcache layer is also introduced in the architecture to cache result of the database query which further enhances the overall I/O performance.
6. All database backup archive files, root location backup and log files of the web servers are stored in scalable OSS. It also allows cross-region data replication to meet demands of a large volume of data replication through the Internet.
7. The two architectures present in VPCs of different regions are connected through Express Connect allowing faster communication between ECS instances, databases and OSS through Intranet.