Cloud Computing Case Study

AZURE MIGRATION & MEDIA SERVICES INTEGRATION

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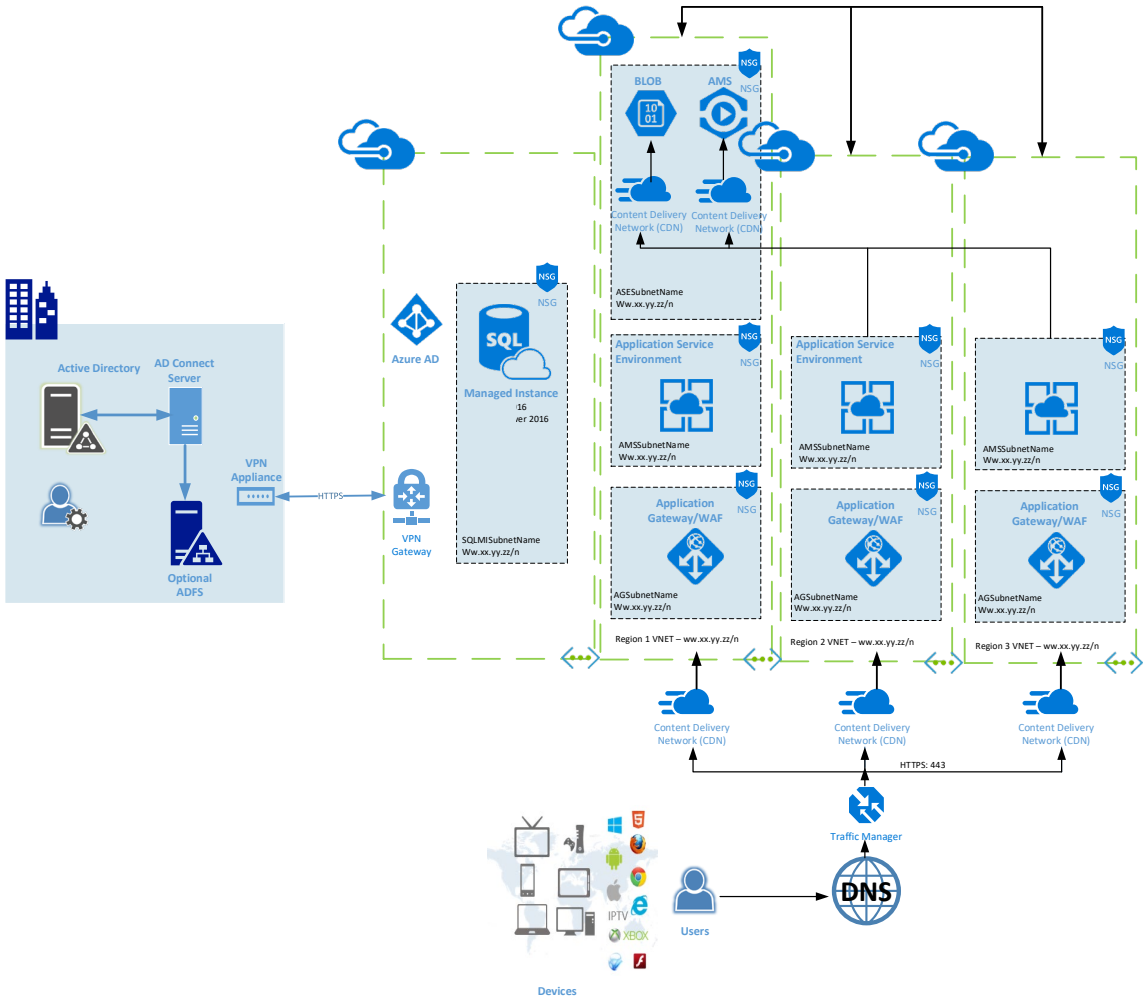
Project Description: On demand intra-regional US subscription based multi-media services



Brief: The customer required a scalable media on demand streaming service, spanning the west, central and eastern regions of the United States. The objective was to have a point of presence with the lowest latency possible supported on both Iaas and Paas Azure resources. In addition, the client required a "lift and shift" of their on premise SQL 2016 database hosted on Windows Server 2016. Their web applications built with a Microsoft technology stack, were hosted on IIS servers. In addition, they wanted to replicate on premise Active Directory to the cloud. The existing multimedia repository was stored in NAS and the customer wished to convert to an API accessible system.

Virtualdeveloper.com conducted a detailed cloud adoption analysis on behalf of several clients. The process typically involved installing and running an enterprise auditing tool (Movere) on a server in the client's data center. Movere is used for itemizing the devices (workstations and servers) available in the client's environment, along with an application to server mapping, schedule of operating systems, service packs and software licensing violations. Movere also

465 Brickell Avenue, Suite 896, Miami FL 33131
Tel: +1 (571) 383-4206 Email: info@virtualdeveloper.com

conducts a resource scan enabling the architect to accurately estimate total cost of ownership and optimize workload resource consumption in the cloud.

Solution Summary:

1. SQL Server Managed Instance - Using the Azure SQL Database Migration tool, we were able to architect a seamless "lift and shift" from On Premise to Azure. The managed instance includes automatic high availability and replication. I instituted a site to vNET VPN connection to allow access to the managed instance via a VPN gateway. An Active Directory Connect (AD Connect) server with optional ADFS was provisioned for directory synchronization.
2. Azure Media Services (AMS) - For low latency, I configured a content delivery network (CDN) node in front of the AMS services. Actual API accessible media was stored in an Azure blob with read only GRS redundancy. I used a KEY CDN to guarantee low latency access to the shared Blob instance. I went for a high level of encryption and digital rights management with multi native DRM including Playready, Widevine and Fairplay.
3. App Service Environment - The client wanted a fully isolated, high performance and high available web tier. I chose the App Service Environment version 2.0 for these purposes. I architected one ASE in each region to maximize scalability. Each ASE has its own level 7 load balancer, an application gateway with web application firewall (WAP) in its own subnet.
4. vNet to VNet Peering - To minimize latency and enable load balancing of the App Service Environments across regions, I designed a VNet to VNet global peering architecture and stacked a CDN node for each in front of a publicly accessible traffic manager.