Case Study | Disaster recovery site set up by overlaying DevOps

Overview

Kubota tractors - Financing module. The client is one of the largest tractor and farm equipment manufacturers with a large US presence.

Kubota offers a full selection of products from small to large-sized tractors for diverse applications and scales. Kubota's tractor-mounted implements are designed for plowing, harrowing and many other tasks. Kubota's high levels of performance and reliability have helped the company establish a strong reputation in the world.

Tool Set

AWS EC2 - VM
Linux routing
AWS - VPC
AWS VPN - On prem to Cloud connectivity.

Challenges

The Financing module is an independent app developed by a third party for providing quotations for tractor financing. the client required the setup of a disaster recovery site if the primary data center goes offline, the main challenge was the requirement of below 5 min of data loss in the event of a failover to the disaster site. The challenge was to keep the cost of the cold site as low as possible. Because of the way the application was designed the IP address of the database server could not be changed, this resulted in the requirement of the DR site having the same IP address scheme, CIDR, and IP for the database server.

Our Solution

We leveraged AWS cloud for creating the secondary site and set up a VPN tunnel to the VPC within AWS. For the database, we set up a bastion router based on IPTABLES and leveraged the DNAT, SNAT, and mangle tables to create sudo interface of the databases (primary onsite and backup in AWS) to communicate. The IP that the primary DB is connected to is the sudo interface and the application connects to the physical interface. Over this architecture, we set up Microsoft SQL replication. for the application servers, we were able to pull the updated the code from artifact repository where the latest build is uploaded. We also created an automated script using Ansible(open source) to bring up the entire infrastructure in one go. Once the script is triggered the entire infrastructure can you scaled up with 5 min to start serving live traffic. Crating the disaster

Results

The requirements of having a warm data center with very low time to recovery are something all organizations require but implementing off-the-shelf solutions is not cost-effective. By leveraging open source technologies like IPTABLES , Linux routing the ansible all the client requirements were met. The total overall cost of running the DR site is two thousand USD per annum.

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