Virtual Design Master - Challenge 4

We've started to deploy infrastructure across the world based on our design from Challenge 3. We're still testing which locations will work best for our ultimate goal of restoring the Earth's collaboration and communication in order to ensure we can keep any further threat to humanity at bay. Our ultimate goal is to bring HumanityLink to a new platform.

The world as we know it will be made up of what we have access to. In this case, we have a VMware server, access to two public clouds environments. We have to change the way that we think about our infrastructure to move further up the stack. In the final challenge, you will deploy a real environment with focus on application and security. Imagine only having a web browser to do it. For that reason, this year's challenge is a little different.

You will have been provided 1 vSphere host on baremetalcloud.com, up to 2 EC2 instances on AWS, up to 4 DigitalOcean instances. This environment will named after one of the new anti zombie weapons. This weapon is designed in the Utility Muffin Research Kitchen.

This will be configured as a cross-cloud environment running a database-enabled web application. You will be given a set of requirements to explain the application needs and the configuration management needs of the environment. The UMRK is the base architecture to provide a secure, resilient application architecture as we prepare for our journey back to recover the Earth.

You must:
- deploy the vSphere HTML5 Host Client
- deploy vCenter VCSA (script preferred) and document the process
- deploy the vCenter Manager for AWS
- deploy a web server of your choice on your vSphere instance
- deploy a database platform on your vSphere environment
- deploy a "Hello Zombie World" application pulling data from your database
- deploy a Puppet server on your second Digital Ocean instance
- deploy Puppet agents on your AWS and Digital Ocean hosted infrastructure
- create a minimal Puppet manifest to prove that the infrastructure is actively managed
- Configure daily security patches for the operating system environment
- Deploy all of your code, configuration files, and manifests to the private Github repository you have been provided
- Create a working copy of your web server environment on AWS and your

database environment on DigitalOcean
- Secure your infrastructure and detail your design choices and reasoning
- Document and diagram the infrastructure including your resiliency and protection strategy
- Provide credentials to the judges to evaluate your infrastructure
- BONUS: Build a load balancer on your environment for your web application

Limitations
- You have only 1 vSphere host
- EC2 are limited to t2.small
- You may only use 2 EC2 instances
- DigitalOcean instances are limited to 1GB RAM instances
- You may only use 4 DigitalOcean instances

Requirements
- Every object must use FQDN under utilitymuffinresearchkitchen.org
- Add resiliency at every layer available

In AWS, you have access to everything in a shared environment with your competitors. Remember that as you define any groups, security, and naming. Be sure to identify your infrastructure in every way available.

Document submission is **due Monday July 25th at 9 PM Eastern Time**.

Email the final design to eric@discoposse.com for review. PDF is preferred.

Good luck everyone!