



Virtual Design Master

Challenge 5- Build Time

To allow the Zombie Assassin System to get off the ground, we will build two sites to begin testing in Africa, and we will need to deploy new infrastructures to run the system.

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1. Executive Summary

1.1.1 Project Synopsis

Our scientists on Mars have attempted to engineer an anti-zombie virus, to eradicate the zombies left on Earth. Since we now have several areas on Earth secured, we are ready to attempt to deliver the anti-zombie virus. The whole system, which we call the Zombie Assassin System is very complex. After vials of anti-zombie virus are sent to earth, robots will pack the virus into aerosol canisters which explode on impact and will be delivered by drones. The drones will then monitor the effects of the anti-zombie virus, and the virus will be modified by scientists on Mars as needed. This is the first step in winning the Earth back from the zombies.

Two sites will be selected to begin testing in Africa, and we will need to deploy new infrastructures to run the system. If successful, the Zombie Assassin System will later be expanded across the globe, and we will be able to start taking our planet back.

1.1.2 Intended Viewers

This document is aimed at the IT professionals who have to administer this environment within these nearly intolerable constraints.

1.1.3 Project Vision

1.1.4 Project Requirements

This should run above two Dell M610 Half height Blade servers with different configurations.



1. Model: Dell M610

CPU: 1 x 1x2.0 GHz Gaines town E5504

Ram: 12GB DDR3-1333

HDD: 1 x 500.0GB 2.5" SATA 5400RPM

2. Model: Dell M610

CPU: 1 x 1x2.13 GHz Harper town E5506

Ram: 16GB DDR3-1333

HDD: 1 x 250.0GB 2.5" SATA 7200RPM

- Build a multi-tenant private cloud platform, with your platform of choice.
- Illustrate deploying at least two virtual workloads of your choice with your orchestration tool of choice.
- Describe updating and patching for both your cloud platform and virtual workloads.
- Build an overlay network across the two physical servers.
- Resiliency in your environment is a must.

1.1.5 Project Constraints

C01 The infrastructure must be deployed on the provided two physical server.

C02 The infrastructure must use a nested deployment of hypervisor of choice (only ESXi can run).

C03	The architecture must include Multi-tenant Cloud Platform. (Bring Your Own Trial ware)
C04	The architecture must use Orchestration tool for automation.
C05	All networks must exist on Distributed Virtual Switches. (VXLAN pre-requisite)
C06	The environment must be able to orchestrate at least two workloads. One must be Linux, the other Windows.
C07	Overlay Network (VXLAN) must be used between the host environments.
C08	Only a /29 of public IP space available.

1.1.6 Project Assumptions

A01	The available hardware is on the VMware HCL.
A02	The hardware provided must be supported with our hypervisor.
A03	The hardware has been certified to run given our environment. smoke test for 48 hours
A04	The hardware has adequate cooling and power.

1.1.7 Project Risks

I01	This entire infrastructure resides on a two physical server with single NIC
I02	vInception deployment model being used. Some things can break or may not run due to memory constraints.
I03	vInception won't give you extra compute as in Inception movie, where actor gets extra time within dream of dream

2. Architectural Design of vInception DC

2.1.1 Physical Design



1. Model: Dell M610

CPU: 1 x 1x2.0 GHz Gaines town E5504

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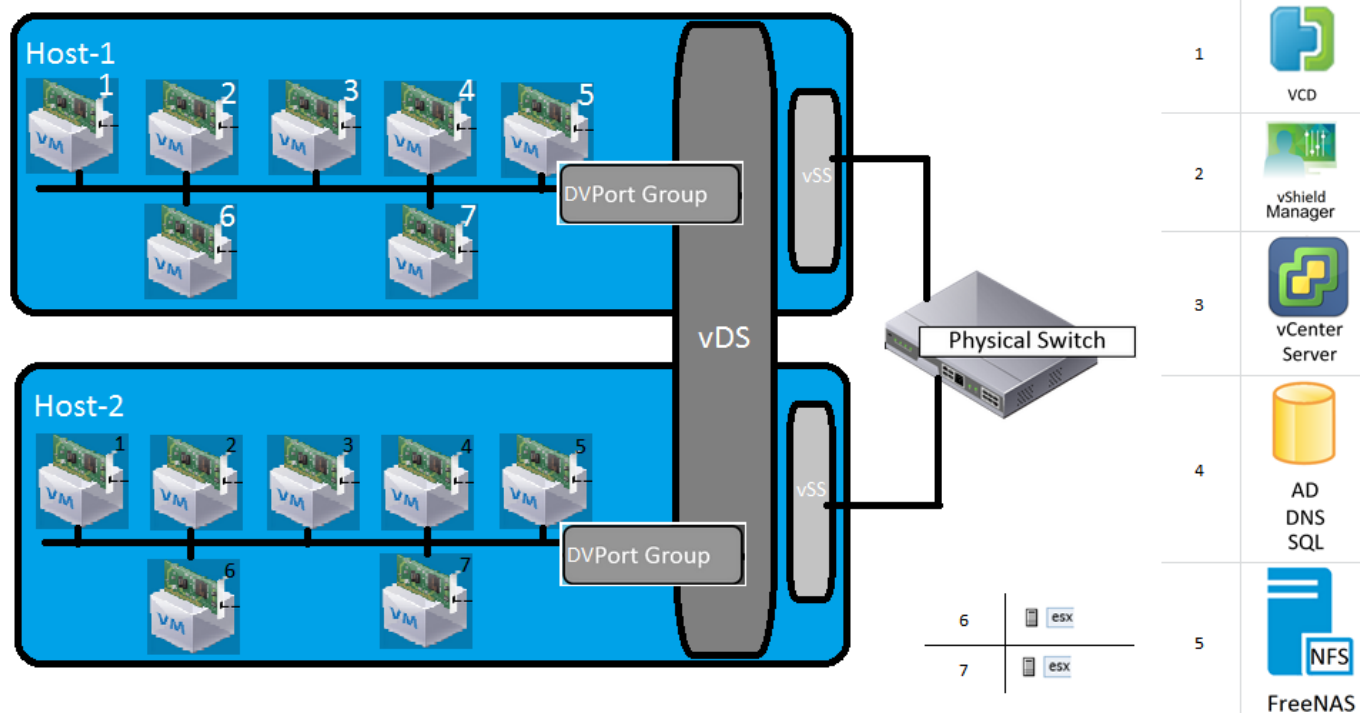
Common configuration between hosts-

1 x 1Gbps NIC

Connected to a public, Internet facing network

A /29 IP Addressing has been allocated for use

2.1.2 Logical Design



The following virtual machines exist and are running on the parent hosts:

DCPR.vdm.local

- Windows Server 2012
- This VM provides DHCP, DNS, NAT, and VPN access to the management network. It also home to the vCenter Orchestrator portion of the environment.
- 2 vCPUs
- 2 GB RAM
- 20 GB hard disk, thin provisioned
- Connected to the dvPortgroup and vSS networks

nfs.vdm.local

- FreeNAS 8
- This VM has been allocated a 200GB portion of the local datastore. Its sole purpose is to expose this storage to the rest of the environment via the NFS protocol
- 1 vCPU
- 256 MB RAM
- 10 GB hard disk for OS, thin provisioned
- 200 GB hard disk for shared storage, thick provisioned

- Connected to the dvPortgroup network

vap01.vdm.local

- vCenter Server Appliance
- This VM provides a single point of management for the raw VM environment and acts as the central hub to the entire infrastructure.
- 2 vCPUs
- 4 GB RAM
- 130 GB hard disk, thin provisioned
- Connected to the dvPortgroup network

vshield.vdm.local

- vShield Manager Appliance
- This VM provides the management of the vShield infrastructure. It is responsible for the configuration and orchestration of the network
- virtualization (VXLAN) deployment and edge services.
- 2 vCPUs
- 1 GB RAM
- 60 GB hard disk, thin provisioned
- Connected to the dvPortgroup network

vcd.vdm.local

- vCloud Director Appliance
- This VM powers the entire vCloud Director portion of the infrastructure. It takes advantage of the resources provided by the
- nested ESXi hosts and the VCSA and VSM appliances.
- 1 vCPU
- 2.5 GB RAM
- 30 GB hard disk, thin provisioned
- Connected to the dvPortgroup network

esx01.vdm.local

- Nested ESXi 5.5 host.
- This VM is used to provide resources to the vCloud Director environment
- 2 vCPUs
- 4 GB RAM
- 8 GB hard disk, thin provisioned
- Connected to the dvPortgroup

esx02.vdm.local

- Nested ESXi 5.5 host.
- This VM is used to provide resources to the vCloud Director environment
- 2 vCPUs

- 4 GB RAM
- 8 GB hard disk, thin provisioned
- Connected to the dvPortgroup

3. Credentials of vInception DC

Server / DNS:	IP:	Username:	Password:
DCPR	98.158.230.251/ 10.0.0.1	vdm\administrator	lgibdamin123
vap01	10.0.0.2	root & Administrator@vsphere.local	lgibdamin123
nfs	10.0.0.3	Auto Logon	None
Phys-Host1	98.158.230.249	root	t7wr3PmMX3DE
Phys-Host2	98.158.230.250	root	DP4pjyabaAP9
vcd	10.0.0.10/11	root	lgibdamin123
vsm	10.0.0.35	admin	default
esx01	10.0.0.4	root	lgibdamin123
esx02	10.0.0.5	root	lgibdamin123

BareMetalCloud credentials: vdm3 / 92horse9