Challenge 1

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1. Executive Summary

Scope

2. Requirements, Assumptions, Constraints & Risks

2.1. Assumptions

A1	Most of the Zombies seems to no longer exist
A2	Hardware server can support delivery
A3	More server necessaire for the infrastructures: 1VC, 2 AD/DNS, 2NTP, load balancer
A4	All the application are not Classified as Critical and can be in the same LAN. (Not DMZ Splitting)
A5	The server has enough RAM to support all the VMs

2.2. Constraints

C1	Cloud software suite that exist today
C2	The 5 year old warehouse is not usable any more
C3	Resiliency must be include

2.3. Requirements

R1	Multi sites Earth/Moon
R2	Justify Hardware decision
R3	Performance is critical for HumanityLink suite
R4	Support 28 web servers, 12 Applications servers, 6 Database

2.4. Risk

R1	If A1 is false Zombies are alive.
R2	Datacenter delivery
R3	Risk on latency network for the EME trip

3. Design Decision

	Use Tachyon Antitelephone
	Justification: Until recently we had a big issue on the link Earth/Moon. A round trip is around 2.5s at the lumic speed. Recently our scientists with the support of our billionary sponsor, resolve the Tolman's Paradox. We can now use the Tachyon antitelephone without causality issues
	Type Performance
D0	Ref:R3

	Use a VSAN Strech Cluster 6.2
	Justification: To provide a high level of availability and fast recovery on the second data center
	Type: recovery, availability
D1	Ref:C1

	At least 2 ESXi per Fault Domain
	Justification: To perform easily maintenance on a site
	Type: manageability
D2	Ref:C3

	We need a designated volunteer for a potential suicide Ops
	Justification: to check if the selected drop zone is zombie free, and because we can.
	Type: Humanity Survival
D3	Ref:R1,A1

	New datacenter survival configuration and autonomous
	Justification: New site need
	Type: N/A
D4	Ref: C2, R1

	PCI flash 1To 7 per ESXi
	Justification: PCI Flash have better performance and support up to 100KRad(Si)
	Type: Performance
D5	Ref: R3,R2

4. Hardware Design

As we build the hardware part on the moon, and will deliver the on earth using the shuttle.

Bundle Hardware 2 containers

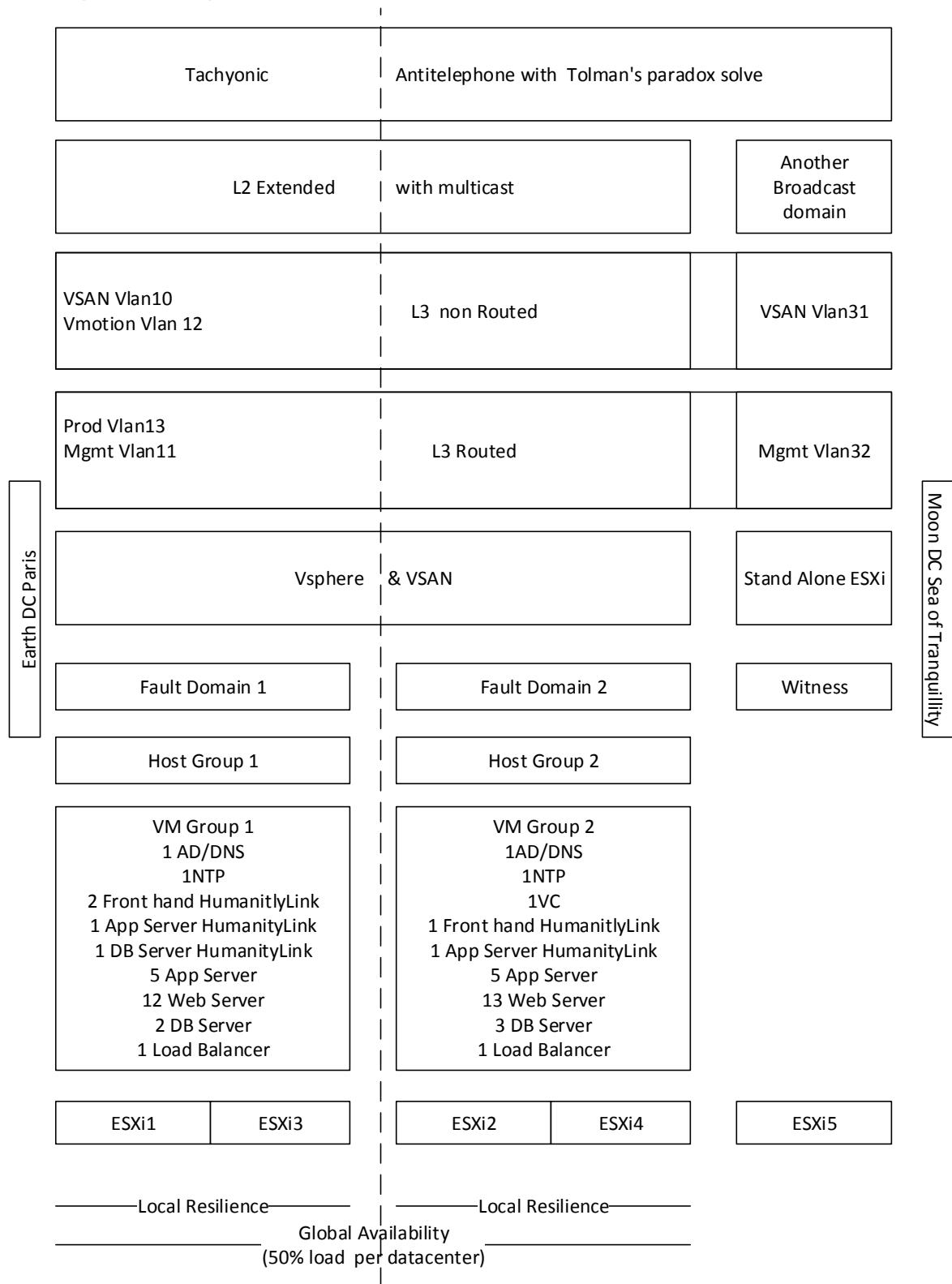> 2 Tachyonic antitelephone

Per container

> 1 Server

> 7 PCI Flash Device 1To
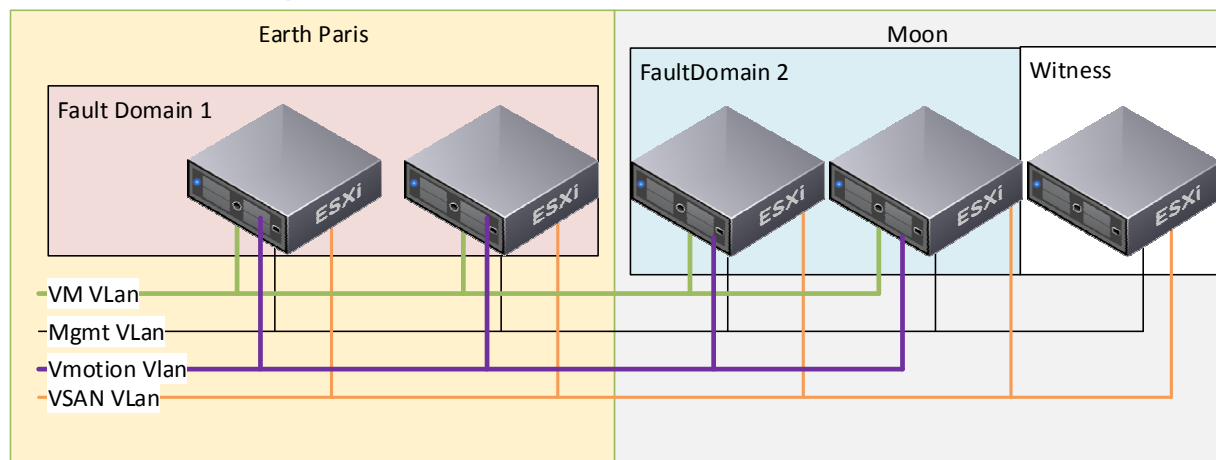
> 2 Network interface 40GB

> 2 Mini autonomous alimentation Time to live 5 years
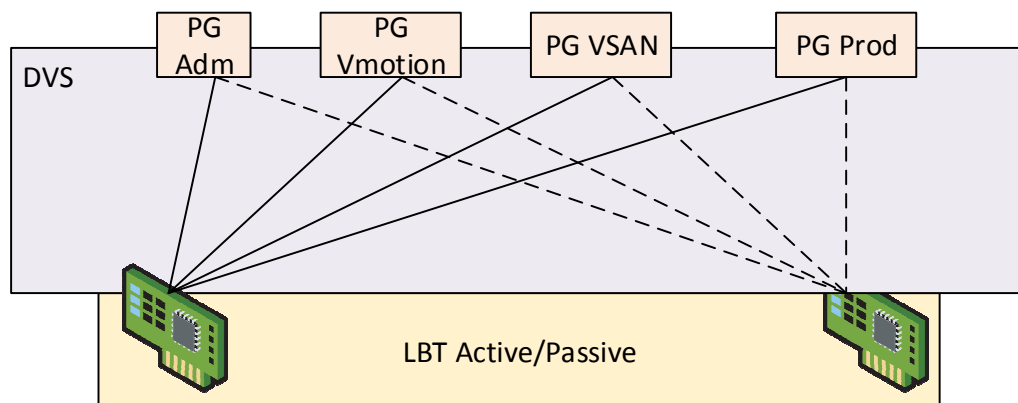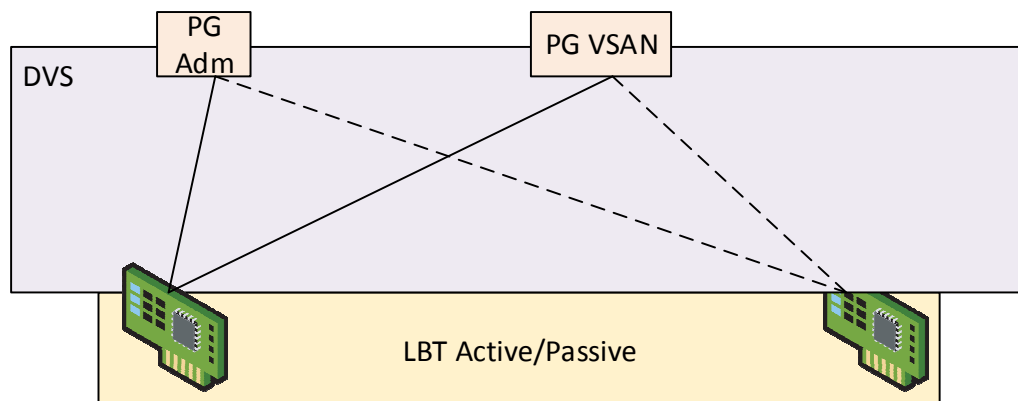
> Enough RAM to support the VMs

5. Logical Design

Tachyonic	Antitelephone with Tolman's paradox solve	
L2 Extended	with multicast	Another Broadcast domain
VSAN Vlan10 Vmotion Vlan 12	L3 non Routed	VSAN Vlan31
Prod Vlan13 Mgmt Vlan11	L3 Routed	Mgmt Vlan32
Vsphere & VSAN		Stand Alone ESXi
Fault Domain 1	Fault Domain 2	Witness
Host Group 1	Host Group 2	

Earth DC Paris

Moon DC Sea of Tranquility

VM Group 1 1 AD/DNS 1NTP 2 Front hand HumanitlyLink 1 App Server HumanityLink 1 DB Server HumanityLink 5 App Server 12 Web Server 2 DB Server 1 Load Balancer	VM Group 2 1AD/DNS 1NTP 1VC 1 Front hand HumanitlyLink 1 App Server HumanityLink 5 App Server 13 Web Server 3 DB Server 1 Load Balancer

ESXi1	ESXi3	ESXi2	ESXi4	ESXi5

————Local Resilience———— ————Local Resilience————

Global Availability
(50% load per datacenter)

6. Network Design

6.1. DVS for Fault Domain Member

6.2. DVS Witness

7. Cluster Design

Cluster Configuration

NB Cluster	1
NB Member	4
HA	Active
Host monitor	Active
Admission Control	50%
Datastor heartbeat	Disable
host isolation	power off and restart on available host
das.isolation.address	VSAN Vlan gateway
DRS	Active
DRS automation	automatic
vm/host rules	should respect rules

8. Application

8.1. HumanityLink Suite logical design

Web Servers		Load Balancer	AD/DNS
Application Servers			
DB Server			