Stretching VMware clusters across distances with EMC's Vplex - the ultimate in High Availability.

VMware TechTalk Live
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What is CDI?

- Value Added Integrator,
- Major partners - VMware, EMC, Cisco, HP
- 19 years in business
- $256 million, 200 employees, 500+ clients in NYC
- Offices in NJ, NYC, Charlotte, Atlanta, Boston, & now Philadelphia
- #1 EMC Partner NY Metro, Top 5 EMC Nationally
- #1 VCE Vblock Partner, NY Metro
Customers Want Metro Availability

High Availability
ACROSS DATA CENTERS

Disaster Recovery
OPERATIONAL AND
3RD SITE RECOVERY
How was Disaster Avoidance & Recovery Done BEFORE Stretched Clusters?
Disaster Avoidance & Recovery – Host

• Move VMs using VMotion to Avoid
• VMs restart using HA to Recover
Disaster Avoidance & Recovery – Site

• Move VMs using SRM to Avoid
• VMs restart using SRM to Recover
Traditional Site Recovery Manager

- **vCenter Prot.**
- **VM VM VM VM**
- **vSphere Cluster A**
- **Distance**
- **VM VM VM VM**
- **vCenter Recov.**
- **vSphere Cluster B**
- **Array-based - typically RecoverPoint, async replication or vSphere Replication (async)**

**Datastore A**
How is Disaster Avoidance & Recovery Done WITH Stretched Clusters?
VMware High Availability

- Extended between distributed parts of the same virtual datacenter
- Automatic rapid recovery from host failures
- No complex clustering software in the VM
VMware VM Host Affinity

- VMware Host Affinity
  - Provides a “site affinity” capability
  - Keeps workloads local to storage until failure
  - Keeps primary and secondary FT VMs in appropriate sites
Stretching VMware vSphere Clusters

vSphere HA Cluster

Stretched Storage - EMC VPLEX

Array based synchronous replication
Planned Datacenter Migration

vSphere HA Cluster

Moving all operations between locations

Standard vMotion of Virtual Machines

Stretched Storage - EMC VPLEX
vSphere Stretched Cluster Considerations
Stretched Cluster w/Vplex Requirements

• 100 km/62 miles
• The maximum round trip latency (RTT) 5 ms.
• Minimum 622 Mbps Vmotion requirements
• The protocol between two VPLEX clusters can be Fibre Channel or IP.
• Layer 2 Stretch (same subnet across both sites) – using classic VLAN or OTV
• No more than 32 hosts in vSphere cluster (per HA)
• Protect vCenter with vCenter Heartbeat
Before failing back, disable DRS rules (uncheck BOTH boxes) to control migration of VMs manually.
SRM vs Stretched Cluster

- **Site Recovery Manager with RecoverPoint**
  - Recovery Point Objective = 15 minutes to around 1 hour
  - Recovery Time Objective = 1 hour to a couple of hours
  - Easy button and workflow for recovery
  - Can build application awareness into workflow
  - Easy button for DR test -- automatic

- **Stretched Cluster with Vplex**
  - Recovery Point Objective = 0
  - Recovery Time Objective = minutes
  - No scritable workflow of recovery
  - HA does not know where application parts are -- manual
  - No structured DR test – BUT VMotion is easy
What is EMC’s Vplex?

• Uses same hardware as EMC’s elite array, the VMAX.
• 3rd site witness recommended, but not required
• Typical network bandwidth generally 3Gb/s to 10Gb/s
• Ethernet recommended, but FC supported
• Capacity based license (recommended)
**VMs**

**Site A**

- App
- Operating System

**Site B**

- App
- Operating System

**Site C**

- App
- Operating System

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**Stretch Cluster**

**Stretched LUNs**

**VNX array w/Vplex**

- Array at Site-A
- Array at Site-B

**Witness**

- FC or IP

**Virtual Center**

**Non-Uniform Access**
EMC Vplex Customer Examples

- **The Home Depot**: ALWAYS ON AVAILABILITY
- **Munich Airport**: 70% MORE UTILIZATION
- **UPS**: ONLINE MIGRATIONS
- **LSCT**: IMPLEMENTED PRIVATE CLOUD
- **Katten**: 15% MORE EFFICIENCY
- **Katten Muchin Rosenman LLP**: MIGRATED 250 LIVE SYSTEMS
- **CASPUR**: MULTI VENDOR MIGRATIONS
- **AOL**: 83% LESS MANAGEMENT
Thank you!

I would like to thank my colleagues Angelo Richichi, Harris Hubbard and Internet personalities Chad Sakac, Vaughn Stewart, Duncan Epping and Lee Dilworth, who’s material I used in this presentation.
Twitter Chat
March 12, Wednesday
2 pm to 3 pm EST
Use Hashtag
#CDIVplex
Contact Info & Questions

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