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# Advanced Virtual Private LAN Services: Enabling instant VMotion across data centers

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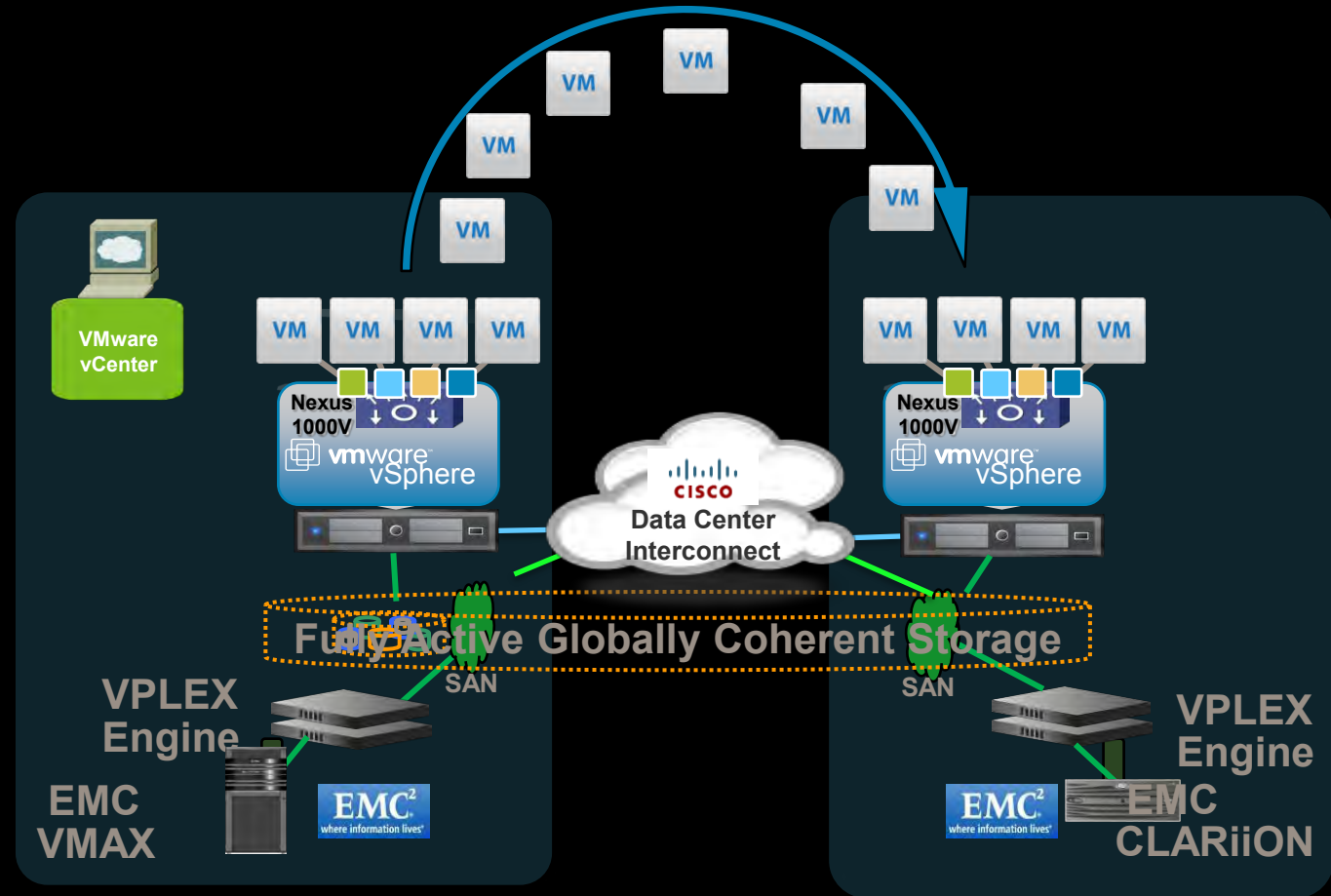
# Data Center Interconnect for Business Continuance

## Application Mobility

**Application mobility:** Transfer application workloads/virtual machines between data centers, with no service interruption

**Business continuance use cases:**

- Capacity management
- Disaster avoidance
- Workload redistribution
- Data center upgrades



# Cisco Data Center Interconnect Options Available Today and Cisco Innovations

## Any location/any transport/on demand

### Dark Fiber/DWDM

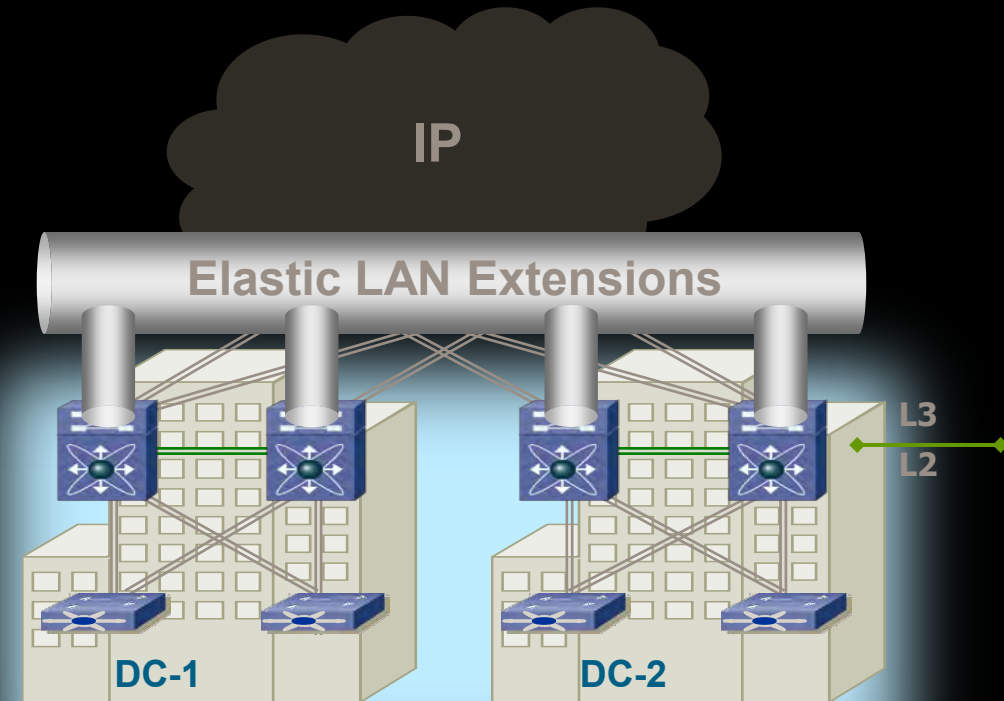
- Catalyst 6500 VSS
- Nexus 7000 vPC
- ONS Crossponder
- OTV with Nexus 7000
- A-VPLS with Catalyst 6500

### MPLS

- EoMPLS
- VPLS and A-VPLS (Catalyst 6500)
- OTV with Nexus 7000

### IP

- Any Transport over GRE (Catalyst 6500)
- OTV with Nexus 7000
- A-VPLS over GRE with Catalyst 6500



# Advanced Virtual Private LAN Service (A-VPLS)



# Cisco Data Center Interconnect

## Advanced-VPLS

- Easy-to-use CLI for VLAN extension
- Reduced complexity!

**Easy Configuration**

**Cisco enhancements to VPLS standard**

**A-VPLS**

- VSS single chassis redundancy
- Fast sub-second failover

**Simplified Redundancy**

**Optimal Loadbalancing**

**L2/L3/L4 Flow Based Balancing**

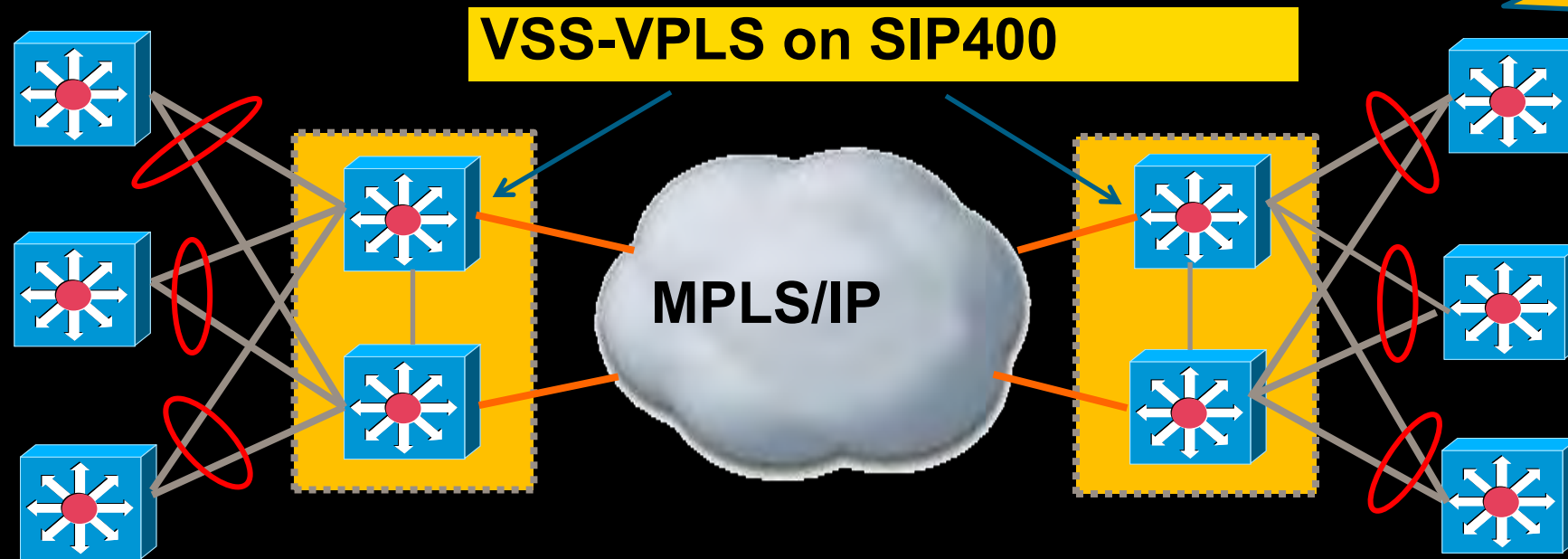
- DC edge to aggregation
- DC edge to WAN
- WAN core

**Ethernet LAN extension over MPLS or IP:**

- “Any flow Any Link” load-balancing
- Multipoint loop-free connectivity

# Simplified Redundancy

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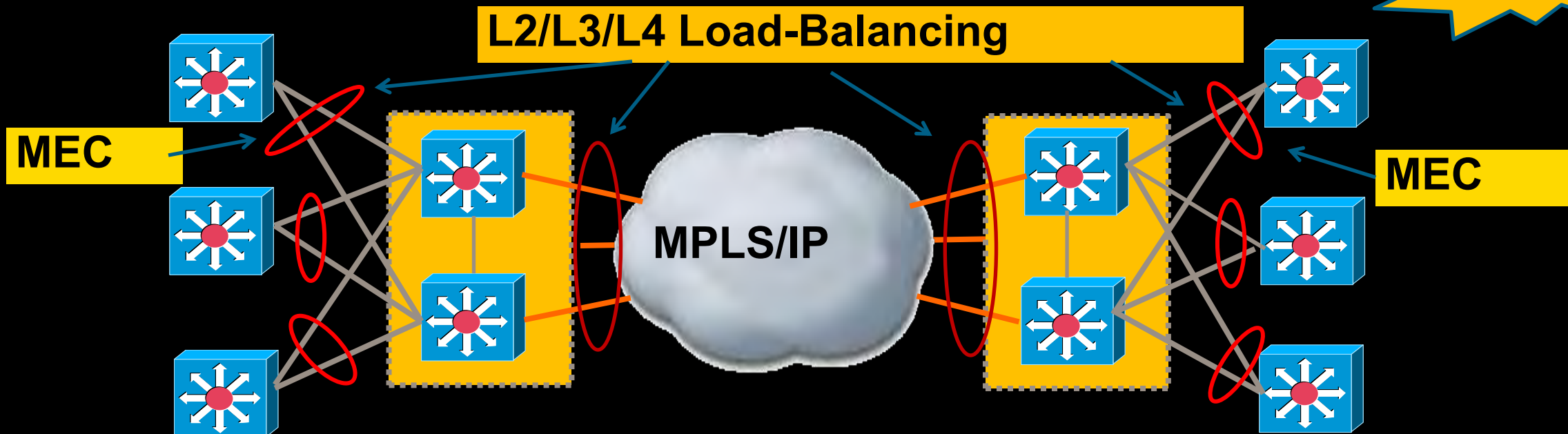


## Benefits

- ✓ Single VSS Box for DC Edge Redundancy
- ✓ Native VSS/MEC Failover – No scripts!!
- ✓ Sub-second Failover - No STP or EEM Dependency

# Optimal Load-Balancing

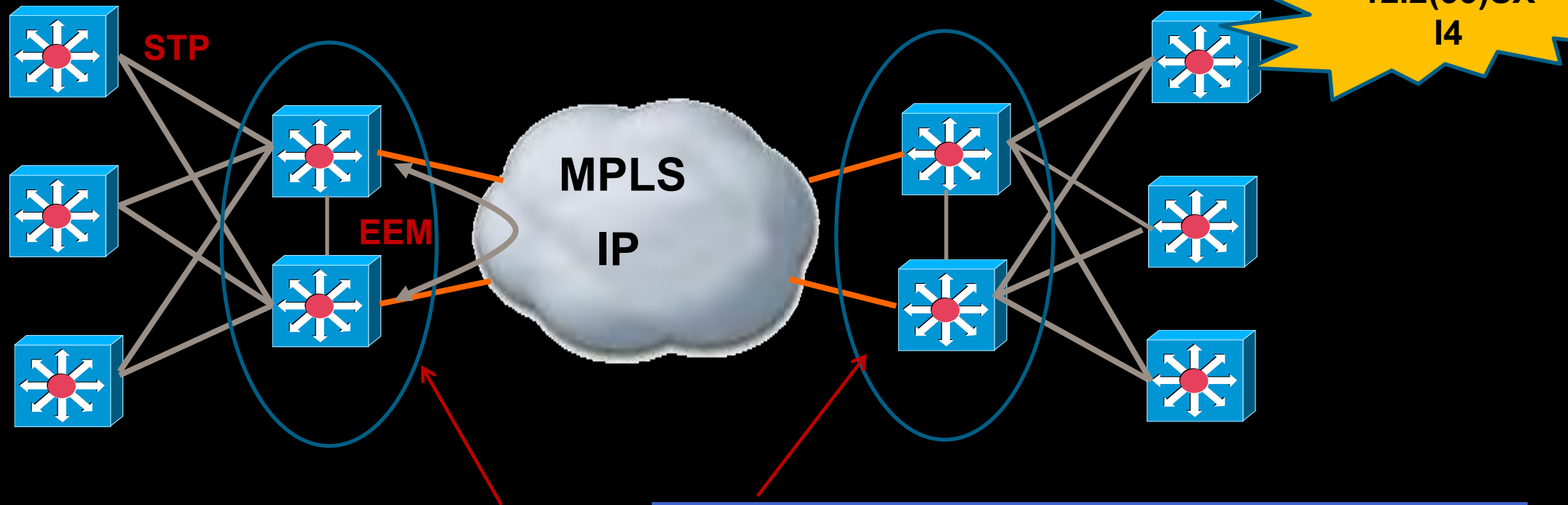
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Port-Channel L2/L3/L4 Load-Balancing using **Flow Labels**

- DC Aggregation to DC Edge
- DC Edge to DC Edge over WAN
- Any Source/destination pair over WAN

# Easy Configuration



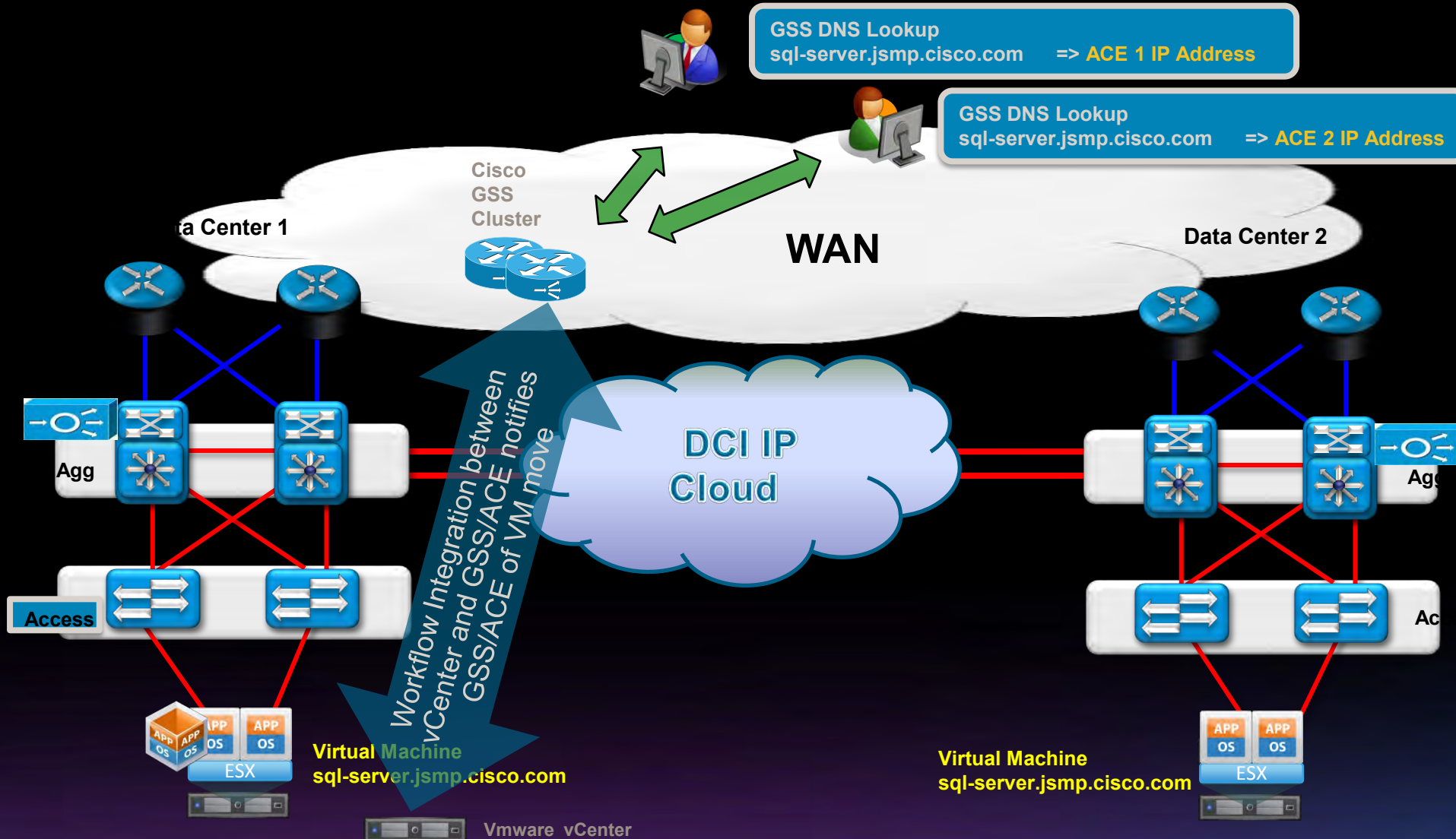
## Traditional VPLS Configuration

```
Interface Vlan 1
xconnect vfi ...
:
Interface vlan 1000
xconnect vfi ...
```

## A-VPLS Configuration

```
interface virtual-ethernet 1
switchport
switchport trunk allowed vlan 1-1000
```

# Routing Optimization with GSS/ACE





**CISCO**