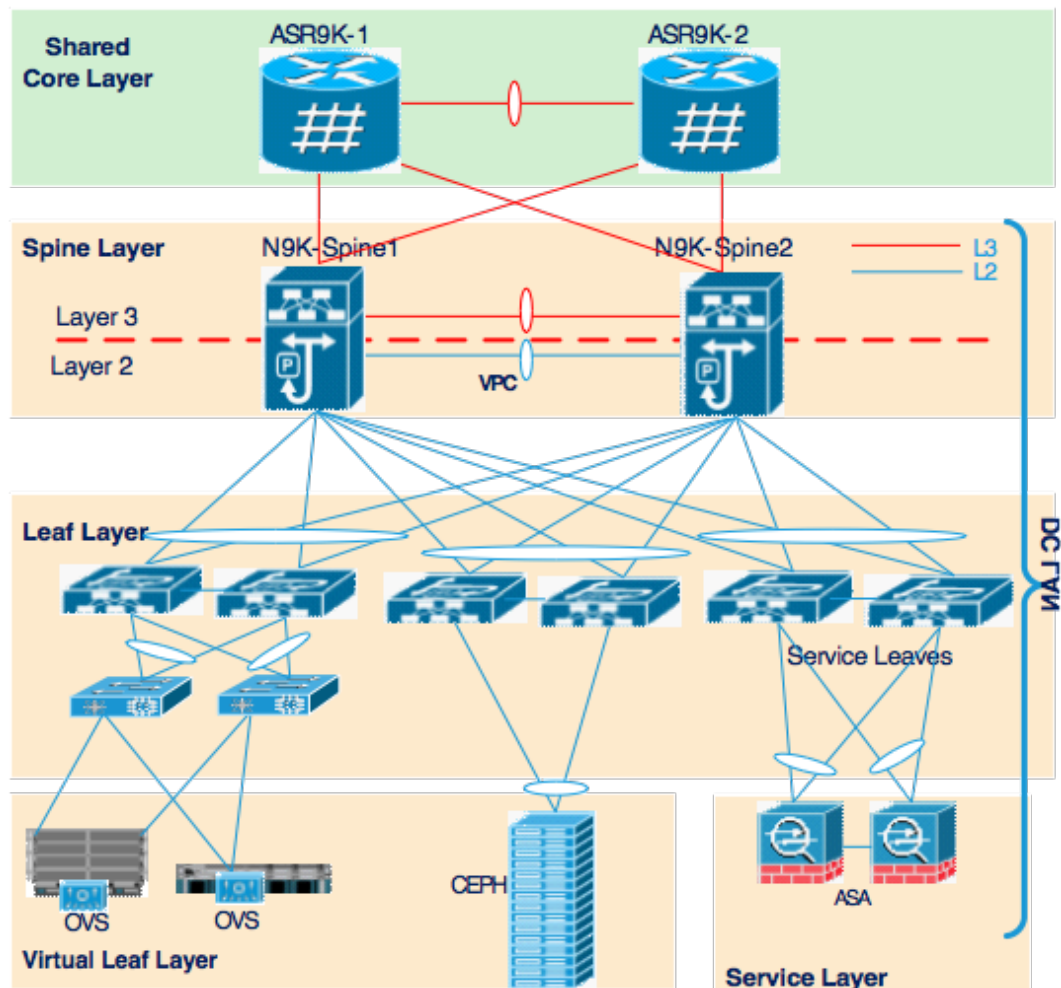


vPC order of operations:

1. Establish IP connectivity for peer keep alive (across M card)
2. Enable vPC & LACP features globally
3. Create vPC domain
4. Define Peer Keepalive address
5. Establish port channel for vPC peer link (between F card)
6. Verify vPC consistency parameters
7. Disable vPC member ports
8. Configure vPC member pros
9. Enable vPC member ports on the primary
10. Enable vPC member ports on the secondary

ACI projects:

- 1) Maintained and expanded the ACI LAN and WAN infrastructure. The LAN network is shown beneath.



## 2) Migrated the OAM network from dual home to single home

```
interface port-channel113
  switchport mode fex-fabric
  fex associate 113
  vpc 113
```

### ~~svl-csl-eng-mgmt-gw2:~~

```
fex 113
  pinning max-links 1
  description "FEX0113"
```

```
interface port-channel113
  switchport mode fex-fabric
  fex associate 113
  vpc 113
```

```
interface Ethernet1/14
  switchport mode fex-fabric
  fex associate 113
  channel-group 113
```

3) After migration, the Changed configuration is as following(in Red)

### ~~svl-csl-eng-mgmt-gw1:~~

```
interface Ethernet1/16
  switchport mode fex-fabric
```

## 3) Migrated the old WAN gateways to new pair of gateways using ASR9000. The physical topology is as the following:



# Spirent Communications Quotation

Please Remit All PO's to:

Spirent Communications Inc  
27349 Agoura Road  
Agoura Hills, California 91301  
Phone: (818)-676-2300  
Fax: (818)-880-6299

In reply to your request, we are pleased to submit the following quotation.  
To expedite your shipment please reference the Quote Number when placing your order.

<b>Date</b>	9/14/2015	<b>Regional Sales Mgr</b> Ed Sunna Spirent Communications - Calabasas - US 1325 Borreagas Ave Sunnyvale CA 94089 USA edvin.sunna@spirentcom.com (408) 752-7164	
<b>Quote#</b>	1-1856V1E	<b>Rev #</b>	1
<b>Effective</b>	9/14/2015	<b>Until</b>	10/14/2015
<b>Status</b>	01 - In Progress	<b>Payment Terms</b>	N60
<b>Quote Currency</b>	USD	<b>Shipping Terms</b>	OPA FOB Origin- PP - Add
<b>To</b> Cisco Systems - Milpitas - US Mike Zheng 428 W Tasman Dr. Mail Stop: SJCI/2 San Jose CA 95134 USA			

## Items

Line	Part#	Product Description	Qty	Net Price	Extended Price
1	SPT-N4U-110	SPIRENT TESTCENTER N4U CHASSIS AND CONTROLLER WITH 110V AC. Requires ACC-2017A or ACC-2018A card carriers if using original large form factor modules.	1	\$7,980.00	\$7,980.00
2	SPK-0005-CISCO	ENTERPRISE/METRO ROUTER TEST SOLUTION B - CISCO ONLY	1	\$4,000.00	\$4,000.00
3	FX2-40G-Q5	SPIRENT FX2 5-PORT 40/10GBE QSFP+	1	\$102,665.20	\$102,665.20
4	ACC-1017A	OPTICAL FIBER BREAKOUT MPO TO 4 LC PAIRS MM 10M	5	\$360.00	\$1,800.00
5	SVC-1001STC	SPIRENT TESTCENTER FACTORY WARRANTY, 90 day software warranty and 1yr hardware warranty per the limited warranty agreement. Free with purchase.	1	\$0.00	\$0.00
<b>Solution Total:</b>					<b>\$116,665.20</b>
<b>SubTotal</b>					<b>\$116,665.20</b>
<b>Total</b>					<b>\$116,665.20</b>

This quotation is valid only for the period indicated and is issued upon the SPIRENT Communications Terms and Conditions. Any discounts provided only apply to this quote revision and are not transferrable to any other quote or purchase. Issuance of a Purchase Order in reference to this quotation constitutes acceptance by Buyer of such Terms and Conditions and SPIRENT Communications objects in advance to any different or additional Terms included in Buyer's order. The above quotation does not include shipping or applicable taxes. A copy of the Terms and Conditions may be attached or have been previously sent to you. Please contact us if you need an additional copy. If nonfunctional devices are included in the purchase order, (a) unless explicitly

ACI-migration 2					
View	Zoom	Formula	Table	Chart	Text
Shape	Media	Comment	Share	Tips	
+	Background	ACI POC	TAPAS	Build JIRAs	IP Address: < >
Device	Number				
9504 ACI LC	2				
9336 ACI	1				
ToR	6				
APIC	3				
N9K-C9504-B2	Nexus 9504 Chassis Bundle with 1 Sup-A, 3 PS, 2 SC, 3				
N9K-X9636PQ	Nexus 9500 linecard, 36p 40G QSFP aggregation lineca				
N9K-X9736PQ	Nexus 9500 ACI Spine line card, 36p 40G QSFP line ca				
N9K-C9372PX	Nexus 9300 with 48p 1/10G SFP+ and 6p 40G QSFP+				
Spirent SPT-N4U	Spirent chassis				
fx2 40G/10G QSFP+	10G/40G Spirent linecard				
SFP/QSFP optics	10G/40G optics				

## 5) Customized python scripts and prepared the APIC installation.

```
Create tenant_count * bd_count BDs
The tenant and application profile will be made if not present
The naming scheme is always tenant-<unique_id>-<mo>-<count>
"""

# log into the APIC and create a directory object

# Assuming every tenant will have a single app profile, 3x epgs app/web/db etc..
# and single private network and 3 bds , one per each epg
bd_count = 1
epg_count = 3
t1 = time.time()
for unique_id in range(start_point, tenant_count + start_point):
    t2 = time.time()
    md.reauth()
    tenant_id = '{}{}'.format(tenant_name, str(unique_id).zfill(4))
    second_id=unique_id/256;
    third_id=unique_id%256;
    if unique_id<=1200 :
        Tenant_Group=(unique_id-1)/400
    elif unique_id<=2400 :
        Tenant_Group=(unique_id-1201)/400+4
    elif unique_id<=3600 :
        Tenant_Group=(unique_id-2401)/400+8
    elif unique_id<=4800 :
        Tenant_Group=(unique_id-3601)/400+12
    elif unique_id<=6000 :
        Tenant_Group=(unique_id-4801)/400+16
    PL_Group=(unique_id-1)/300
    print 'Creating Tenant', tenant_id
    # the top level object on which operations will be made
    topMo = cobra.model.pol.Uni('')
    fvTenant = cobra.model.fv.Tenant(topMo, name=tenant_id)
    aaaDomainRef = cobra.model.aaa.DomainRef(fvTenant, name='all')
    # Create the tenant, private network/vrf/context, and security domain
    print 'Deploying BDs...'
    # Calculate a unique ID number for this tenant + bd combination
    start_id = ((unique_id - 1) * bd_count) + 1
    end_id = start_id + bd_count
    fvBD = cobra.model.fv.BD(fvTenant, name='{}-BD'.format(tenant_id), arpFlood='no', unkMacUcastAct='proxy', unkMcastAct='flood', unicastRoute="yes")
    # associate the bds with private network
    #if unique_id<=600:
    fvCtx = cobra.model.fv.Ctx(fvTenant, name='{}-network'.format(tenant_id))
    fvRsCtx = cobra.model.fv.RsCtx(fvBD, tnFvCtxName='{}-network'.format(tenant_id))
```