

CMPE 282 CLOUD SERVICES

HOMEWORK - 2

CISCO APIC 3.0 WITH UCS DIRECTOR 6.5

TEAM SPARTANS

MUKESH RANJAN SAHAY

THIRUMALAI NAMBI DOSS PALANI

MUTHU KUMAR SUKUMARAN

SUDHA AMARNATH

Scenarios

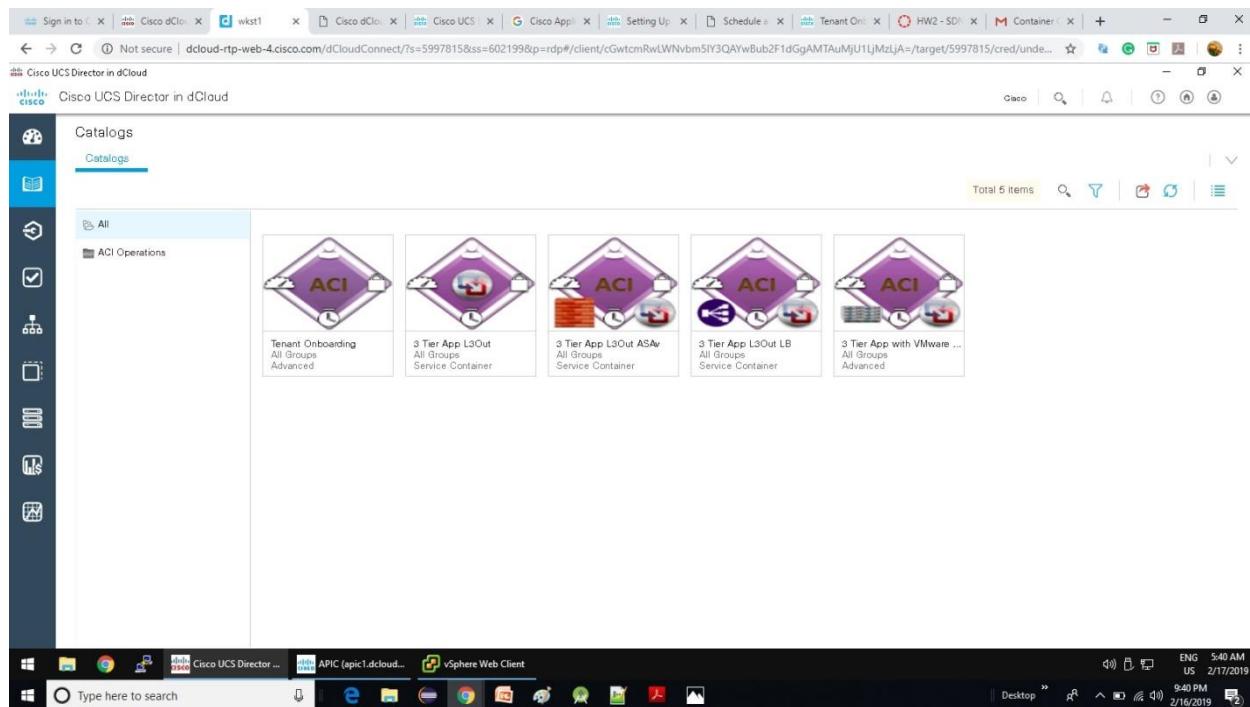
This assignment includes the following scenarios:

- **Scenario 1:** Tenant Onboarding
- **Scenario 2:** Deploy a Simple 3-Tier Application Container with L3Out
- **Scenario 3:** Deploy an Application Container with L4-L7 Services (ASAv)
- **Scenario 4:** Deploy a 3-Tier Application with L4-L7 Services (Load Balancer)
- **Scenario 5:** Deploy a 3-Tier Application with a Physical Server (Emulated)

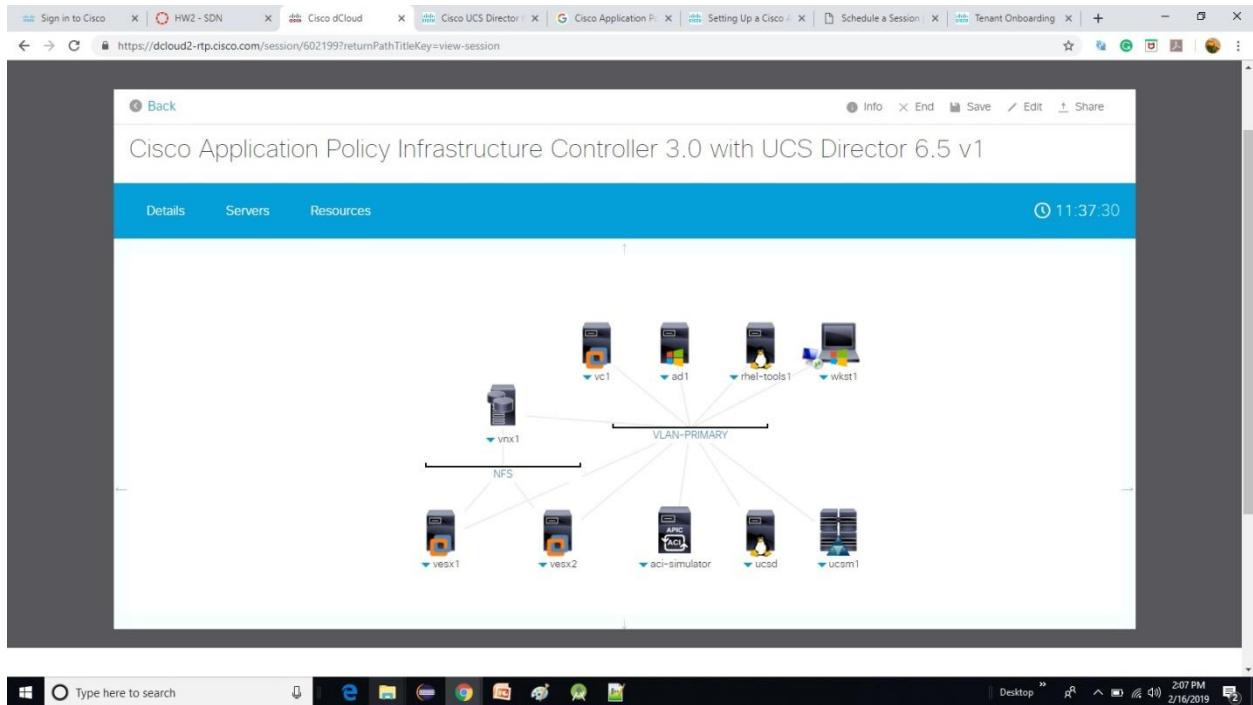
Cisco D Cloud Assignment Link

<https://dcloud2-rtp.cisco.com/content/demo/367927>

UCS Director Catalogs



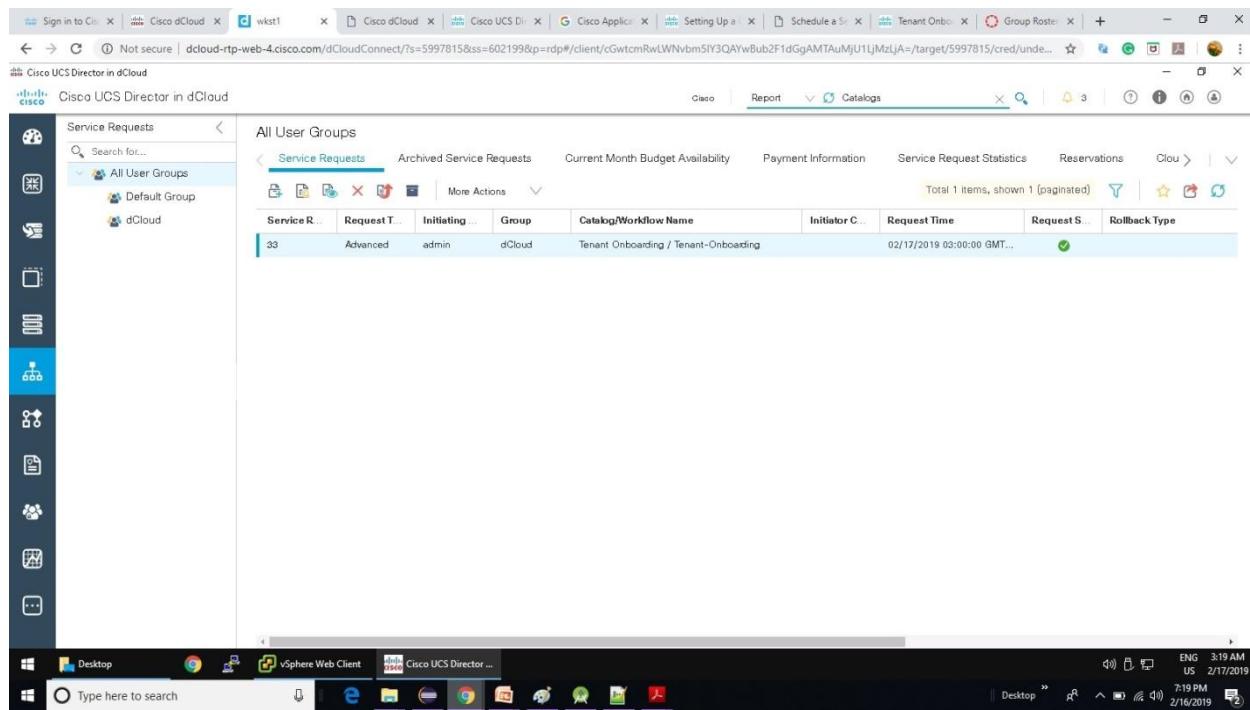
D cloud - Topology



Scenario 1: Tenant Onboarding - Workflow

- Creates a new security group and user in UCS Director for the Tenant
- Interfaces with Cisco APIC and creates the tenant specified in the workflow wizard, and creates the corresponding tenant in UCS Director.
- Identify Virtual Compute Resources: Identifies the compute & storage resources that are available to the tenant in VMware, and creates the VMware resource pool.
- Creates a private network for the tenant in APIC (VRF) and associates the identified infrastructure resources to the UCS Director tenant
- Sets up the Tenant for UCS Director Application Container Services.

Scenario 1: Tenant Onboarding – Service Request



The screenshot shows the Cisco UCS Director in dCloud interface. The left sidebar has icons for Service Requests, All User Groups, dCloud, and others. The main pane displays a table of service requests under the 'Service Requests' tab. The table has columns: Service R#, Request T, Initiating C, Group, Catalog/Workflow Name, Initiator C, Request Time, Request S, and Rollback Type. One row is visible: Service R# 33, Request T Advanced, Initiating C admin, Group dCloud, Catalog/Workflow Name Tenant Onboarding / Tenant-Onboarding, Request Time 02/17/2019 03:00:00 GMT..., and Rollback Type (green checkmark). The top navigation bar includes tabs for Cleo, Report, Catalogs, and various status indicators. The bottom taskbar shows icons for Desktop, vSphere Web Client, and Cisco UCS Director, along with a search bar and system status.

Service R#	Request T	Initiating C	Group	Catalog/Workflow Name	Initiator C	Request Time	Request S	Rollback Type
33	Advanced	admin	dCloud	Tenant Onboarding / Tenant-Onboarding		02/17/2019 03:00:00 GMT...		✓

Scenario 1: Tenant Onboarding – Service Request Creation

The screenshot shows the Cisco UCS Director in dCloud interface. The main window displays a service request titled "Tenant Onboarding". The "Workflow Status" tab is selected, showing a timeline of 12 steps:

- Step 4: Create APIC Tenant (Completed, Sun Feb 17 2019 03:00:18 GMT+0000)
- Step 5: Create UCSD Tenant (Completed, Sun Feb 17 2019 03:01:24 GMT+0000)
- Step 6: Identify Virtual Compute Resources (Completed, Sun Feb 17 2019 03:01:31 GMT+0000)
- Step 7: Identify Virtual Storage Resources (Completed, Sun Feb 17 2019 03:01:36 GMT+0000)
- Step 8: Create Resource Pool (Completed, Sun Feb 17 2019 03:01:40 GMT+0000)
- Step 9: Create Private Network (Completed, Sun Feb 17 2019 03:01:44 GMT+0000)
- Step 10: Tenant Resource Allocation (Completed, Sun Feb 17 2019 03:01:48 GMT+0000)
- Step 11: Tenant Container Association (Completed action, Sun Feb 17 2019 03:01:54 GMT+0000)
- Step 12: Completed (Completed successfully, Sun Feb 17 2019 03:01:57 GMT+0000)

The sidebar on the left includes icons for All User Groups, Service Requests, Workflow Status, Log, Objects Created and Modified, and Input/Output.

Scenario 1: Tenant Onboarding – vSphere WebClient BlueSky tenant creation

The screenshot shows the vSphere WebClient interface. The left sidebar shows the navigation tree under "vc1.dcloud.cisco.com" with "BlueSky" selected. The main pane displays the "Resource Pool" section, which includes a diagram of a cluster (host) with several virtual machines connected to a central purple "Resource Pool". Below the diagram, a text box explains what a resource pool is: "Resource pools can be used to hierarchically partition available CPU and memory resources of a standalone host or a cluster. Creating multiple resource pools allows you to take more advantage of the aggregate computing capacity available across all hosts in a cluster. In addition, you do not need to set resources on each virtual machine. Instead, you can control the aggregate allocation of resource to the set of virtual machines by changing settings on their enclosing resource pool."

The "Recent Tasks" table shows the task "Create resource pool" completed successfully:

Task Name	Target	Status	Initiator	Queued For	Start Time	Completion Time	Server
Create resource pool	dCloud-Cluster	Completed	DCloudAdministrator		3 ms	2/17/2019 3:01:39 AM	vc1.dcloud.cisco.com

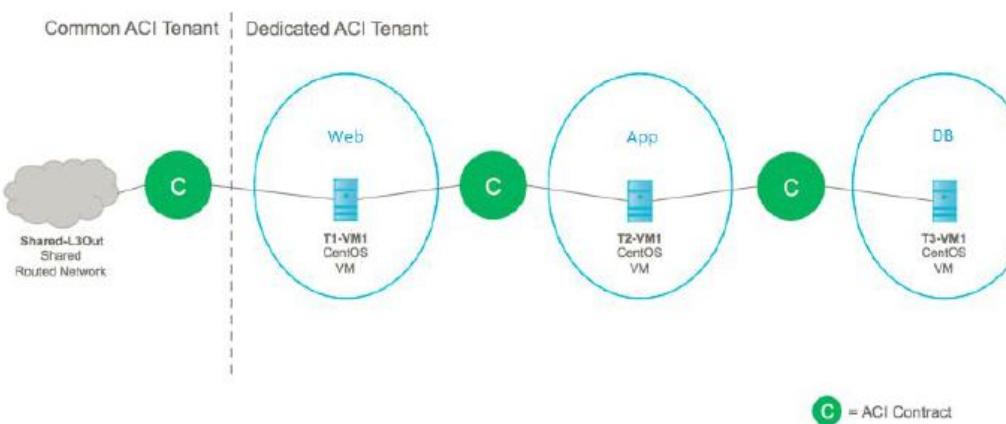
Scenario 1: Tenant Onboarding – BlueSky_PrivateNetwork creation in APIC Client

The screenshot shows the Cisco APIC Client interface. The left sidebar lists 'Tenant BlueSky' with sub-options like Application Profiles, Networking, Bridge Domains, and VRFs. Under VRFs, 'BlueSky_PrivateNetwork' is selected. The main pane displays the 'VRF - BlueSky_PrivateNetwork' configuration, which includes a summary table with metrics like MTU, MTU, and a green status bar at the bottom.

Scenario 1: Tenant Onboarding – TenantResourceGroup in UCS Director

The screenshot shows the Cisco UCS Director interface. The left sidebar has a navigation tree with 'Cisco UCS Director in dCloud' selected. The main pane shows the 'TenantResourceGroup (RG-dCloud)' page, which lists resource entities like BlueSky, dCloud_APIC, and various VMware components. A table provides detailed information for each entity, including Entity, Entity Type, Component, Resource Group, Tenant resource allocation type, Application resource allocation type, Containers, and State.

Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out



Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – Workflow

The 3 Tier App L3Out workflow performs the following steps:

- Creates a container in UCS Director and allocates resources.
- Creates the APIC objects – Application profile, Private network, Bridge Domains and Contracts. New Port Profiles are automatically propagated to VMware Distributed Switch..
- Creates the VM for each application in VMware, connecting them to the relevant EPGs for their tier.
- Sends confirmation email to Tenant Admin Email Address (from Scenario 1).

Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – Service Creation

Service Request Id	Request Type	Initiating User	Group	Catalog/Workflow Name	Initiator Comments	Request Time	Request Status	Rollback Type
38	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:04 GMT+0000	✓	
37	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:03 GMT+0000	✓	
36	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:03 GMT+0000	✓	
35	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:03 GMT+0000	✓	
34	Advanced	BlueSky	BlueSky	3 Tier App L3Out / APIC Container Setup		02/17/2019 03:39:06 GMT+0000	✓	

Service Request

Current status for the service request.

Overview

- Request ID: 34
- Request Type: Advanced
- Workflow Name: APIC Container Setup
- Workflow Version Label: 6.1
- Request Time: 02-17-2019 03:38:06 GMT+0000
- Request Status: Complete
- Comments:

Ownership

- Group: BlueSky
- Initiating User: BlueSky

Catalog Information

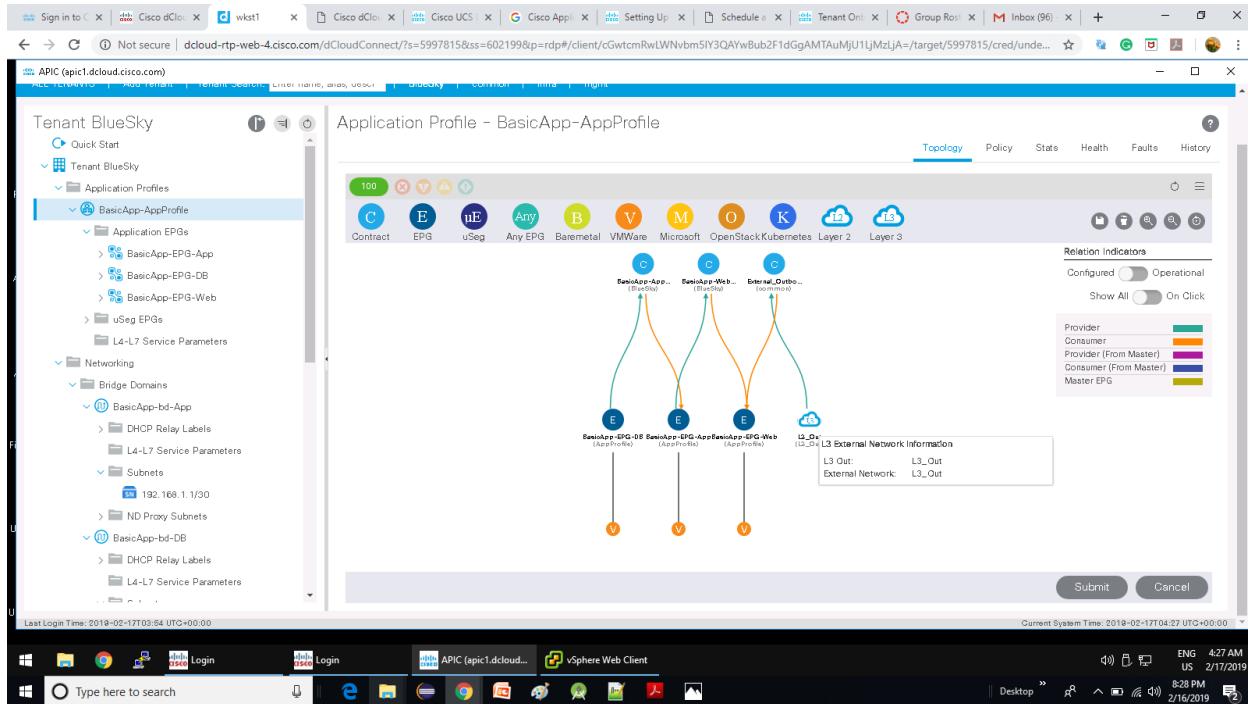
- Catalog Name: 3 Tier App L3Out
- Catalog Description: 3 Tier Application on vSphere with L3 Out

Timeline

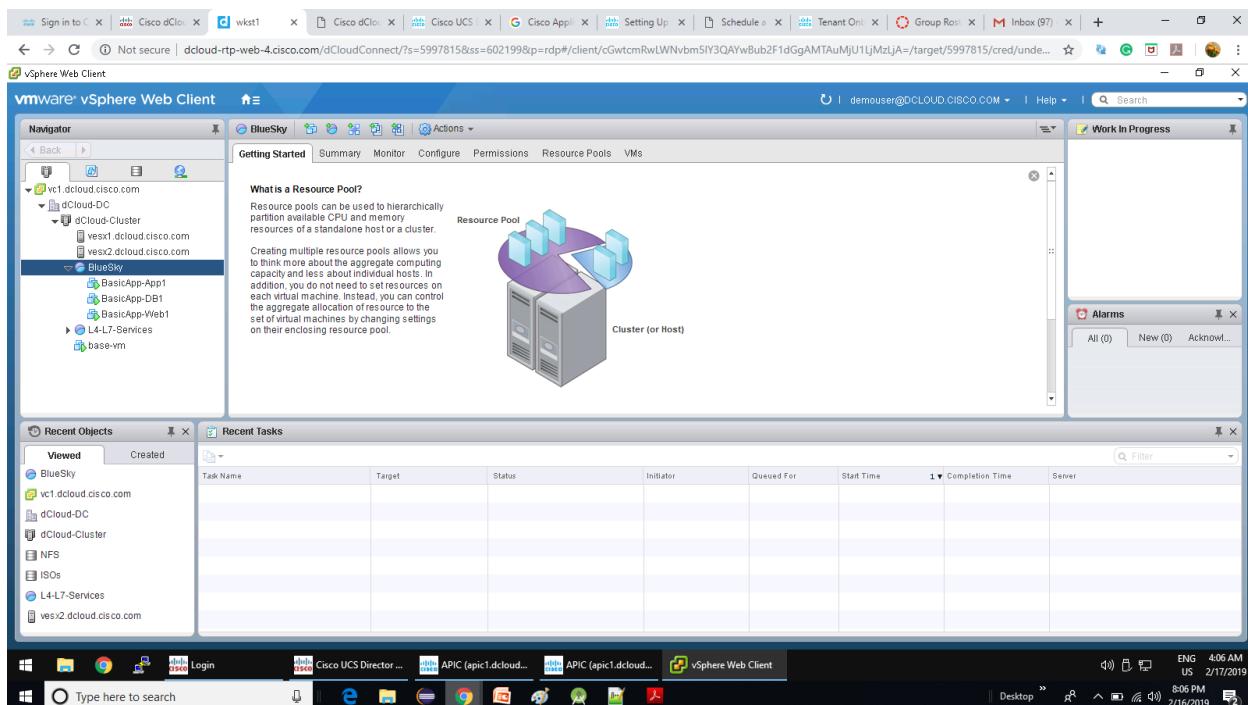
1. Initiated by BlueSky
Sun Feb 17 2019 03:38:09 GMT+0000 (GMT Standard Time)
2. Create Container
Sun Feb 17 2019 03:38:15 GMT+0000 (GMT Standard Time)
3. Update Container Parameters
Sun Feb 17 2019 03:38:18 GMT+0000 (GMT Standard Time)
4. Update Container Limits
Sun Feb 17 2019 03:38:21 GMT+0000 (GMT Standard Time)
5. GetResourceRequirementFromThroughput
Sun Feb 17 2019 03:38:27 GMT+0000 (GMT Standard Time)
6. Allocate APIC Container Resources
Sun Feb 17 2019 03:38:42 GMT+0000 (GMT Standard Time)
7. Verify Container Resource Limits
Sun Feb 17 2019 03:38:45 GMT+0000 (GMT Standard Time)
8. Check if DR is enabled on Container.
Condition is False
Sun Feb 17 2019 03:38:51 GMT+0000 (GMT Standard Time)
9. Create APIC Tenant Application Profile
Sun Feb 17 2019 03:38:54 GMT+0000 (GMT Standard Time)
10. Create Private Network
Sun Feb 17 2019 03:38:58 GMT+0000 (GMT Standard Time)

Trigger Multiple Container Tier Creation

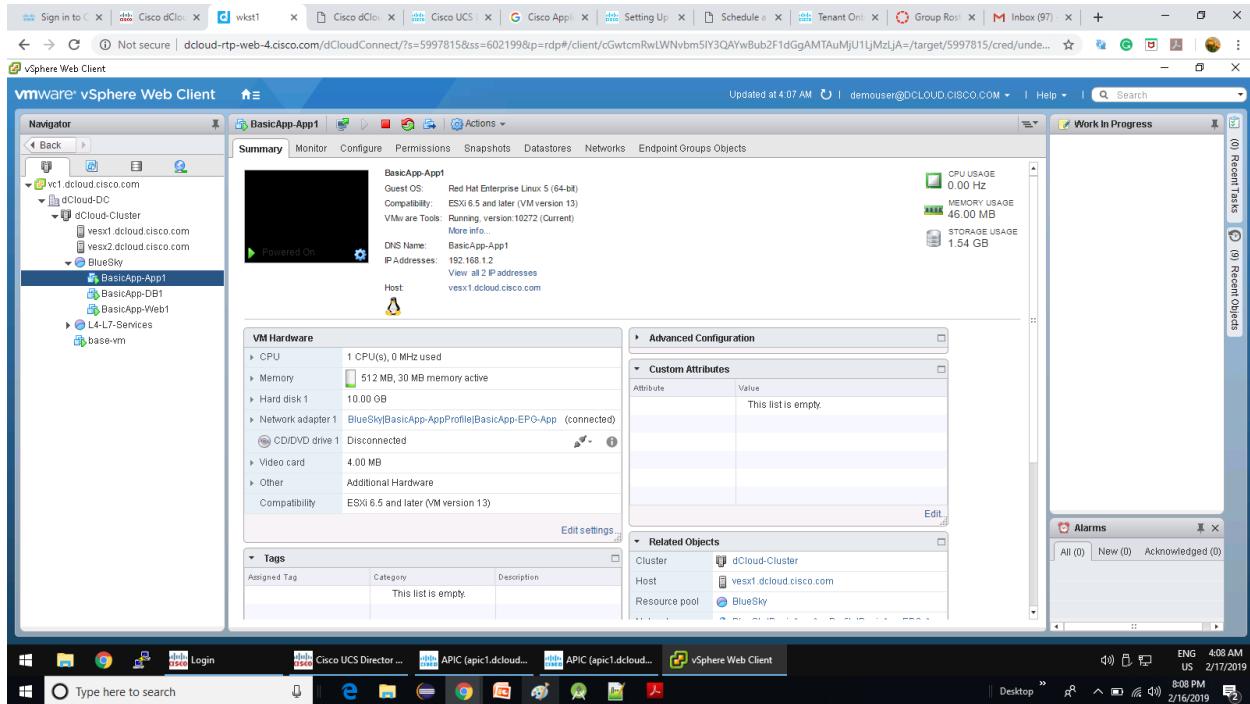
Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – BasicApp Application profile Topology



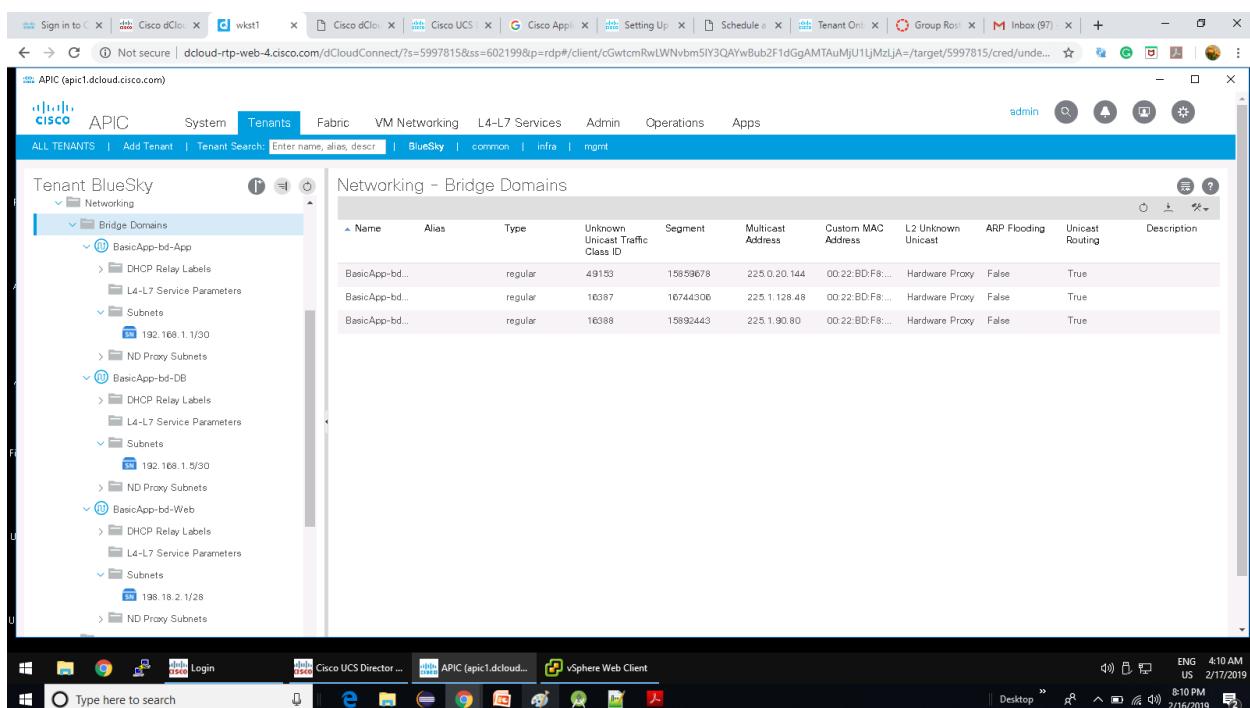
Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – vSphere Web Client BasicApp Creation



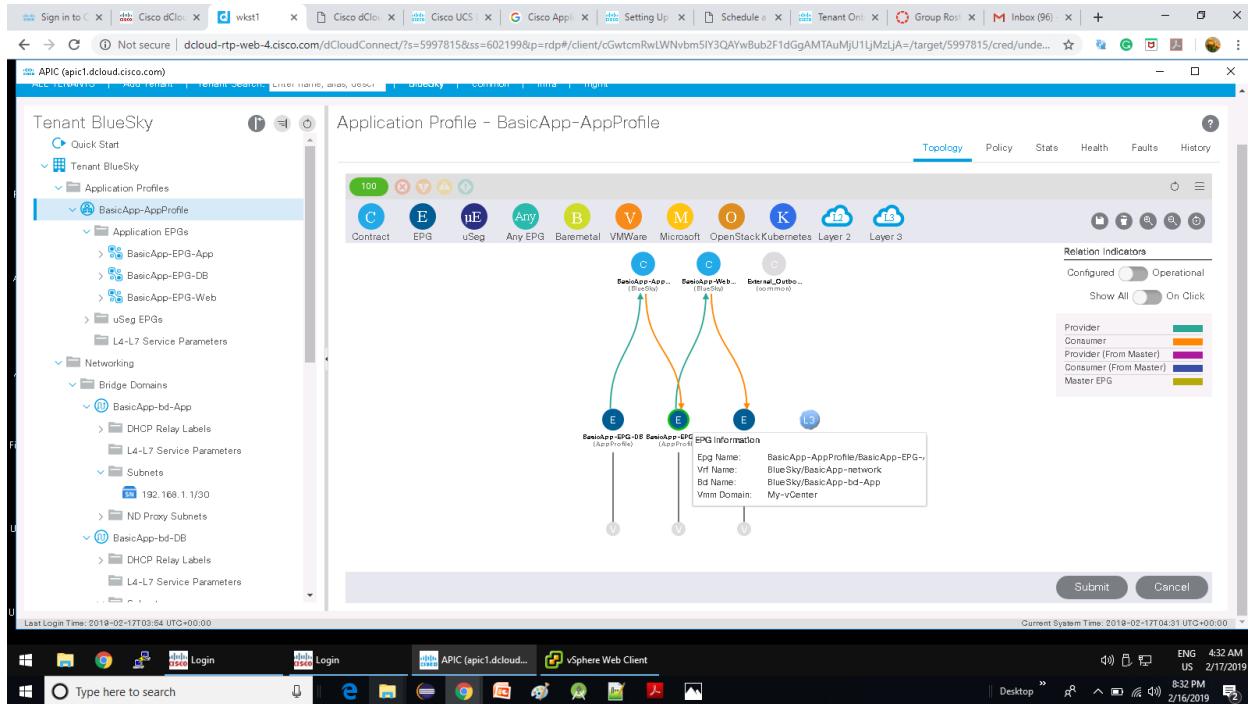
Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – VM Hardware profile



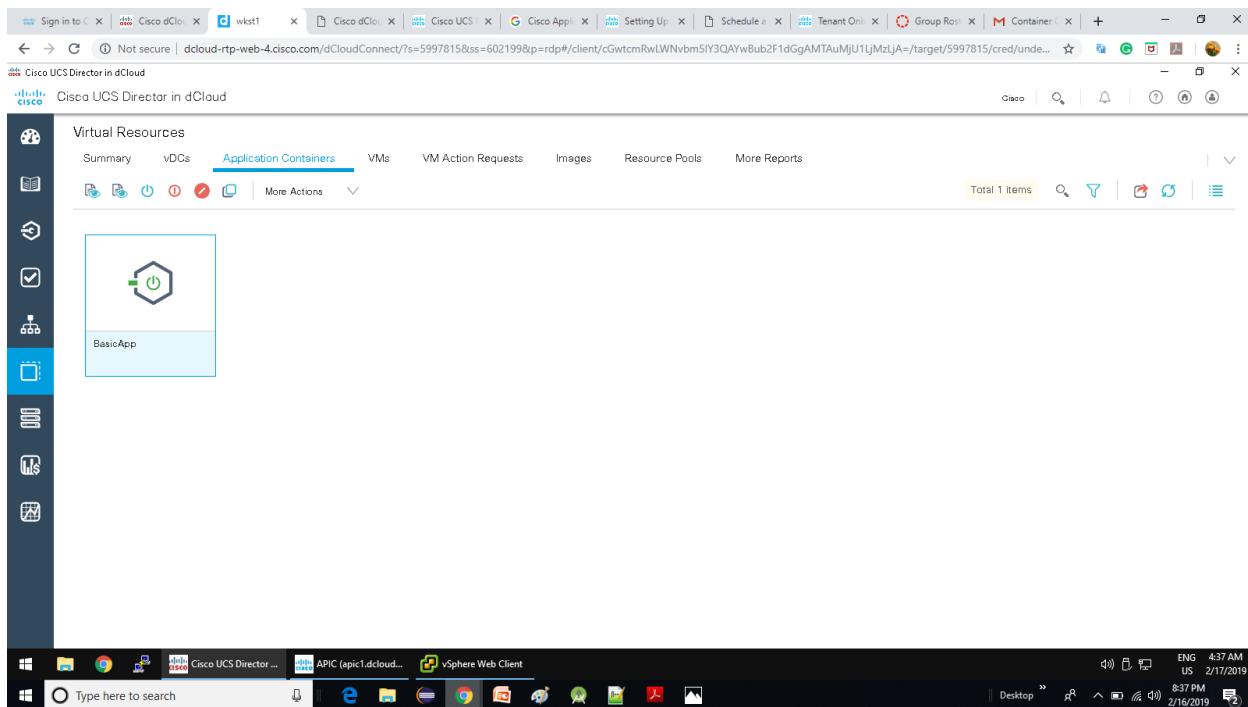
Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – APIC Bridged Domain



Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – APIC Application BasicApp AppProfile



Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – UCS Director Virtual Resource for BasicApp



Scenario 2: Deploy a Simple 3-Tier Application Container with L3Out – Container Created Email

Container Created (Requester)

ucsd@dcloud.cisco.com
to me ▾

Container Name: BasicApp
DR Enabled: No
Container Template: L3-T1-T2-T3
Group: BlueSky
Created: Sun Feb 17 03:38:15 UTC 2019
Leased Until:
Service Request: 34 (Initiated by BlueSky)

Virtual Machines

Cloud Name	VMID	VM Name	Status	IP Address	Provisioned Time
VMware	76	BasicApp-Web1	ON	198.18.2.2	Sun Feb 17 03:41:30 UTC 2019
VMware	77	BasicApp-App1	ON	192.168.1.2	Sun Feb 17 03:42:34 UTC 2019
VMware	78	BasicApp-DB1	ON	192.168.1.6	Sun Feb 17 03:43:39 UTC 2019

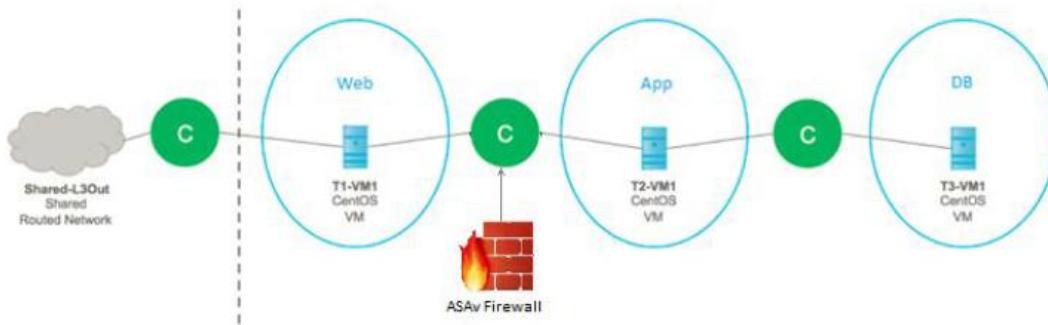
VM Name: BasicApp-Web1
VM ID: 76
VM Type: Application VM
OS: Red Hat Enterprise Linux 5 (64-bit)
Hostname: BasicApp-Web1
Status: ON (poweredOn)
Disk Size: 1.54 GB Committed, 8.45 GB Uncommitted
Memory: 0.5 GB (0 Reserved)
CPU: 1 X 2.7 GHz (0 Reserved)

Network Interfaces:

Adaptor Name	IP Address	MAC Address	Network Name
Network adapter 1	198.18.2.2 fe80::250:56ff:fe7:7185	00:50:56:a7:71:85	BlueSky BasicApp-EPG-Web

Console Access: vnc://vesx1.dciout.cisco.com:5924

Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv)



Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – Workflow

The 3 Tier App L3Out ASAv workflow performs the following steps:

- Creates a container in UCS Director and allocates resources.
- Creates the APIC objects – Application Profile, private network, Bridge Domains and Contracts. New Port Profiles are automatically propagated to the VMware Distributed Switch.
- Creates the VM for each application in VMware, connecting each to the relevant Port Profile for its tier.
- Creates a child workflow that deploys a new ASAv virtual appliance to VMware.
- Another child workflow sets up the L4-L7 Service Graph configuration (ASAv)
- Sends confirmation email to Tenant Admin Email Address (from Scenario 1).

Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – Service Creation

Screenshot of Cisco UCS Director in dCloud showing a list of service requests. Request 41 is selected, detailing the creation of a 3 Tier App L3Out ASAv / APIC Container Setup.

Service Request Id	Request Type	Initiating User	Group	Catalog/Workflow Name	Initiator Comments	Request Time	Request Status	Rollback Type
55	Advanced	BlueSky	BlueSky	APIC Container Configure Multiple Services		02/17/2019 04:57:03 GMT+0000	✓	
54	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 04:55:18 GMT+0000	✓	
53	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 04:55:19 GMT+0000	✓	
52	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 04:55:18 GMT+0000	✓	
51	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 04:55:18 GMT+0000	✓	
47	Advanced	BlueSky	BlueSky	APIC Container Setup Network Devices		02/17/2019 04:49:53 GMT+0000	✓	
45	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 04:42:23 GMT+0000	✓	
44	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 04:42:23 GMT+0000	✓	
43	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 04:42:23 GMT+0000	✓	
42	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 04:42:22 GMT+0000	✓	
41	Advanced	BlueSky	BlueSky	3 Tier App L3Out ASAv / APIC Container Setup		02/17/2019 04:40:22 GMT+0000	✓	
40	Undo Workflow	BlueSky	BlueSky	Rollback APIC Container Setup (SR 34)		02/17/2019 04:42:46 GMT+0000	✓	
38	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:04 GMT+0000	✓	
37	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:03 GMT+0000	✓	
36	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:03 GMT+0000	✓	
35	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 03:39:03 GMT+0000	✓	
34	Advanced	BlueSky	BlueSky	3 Tier App L3Out / APIC Container Setup		02/17/2019 03:38:00 GMT+0000	✓	Complete Rollback

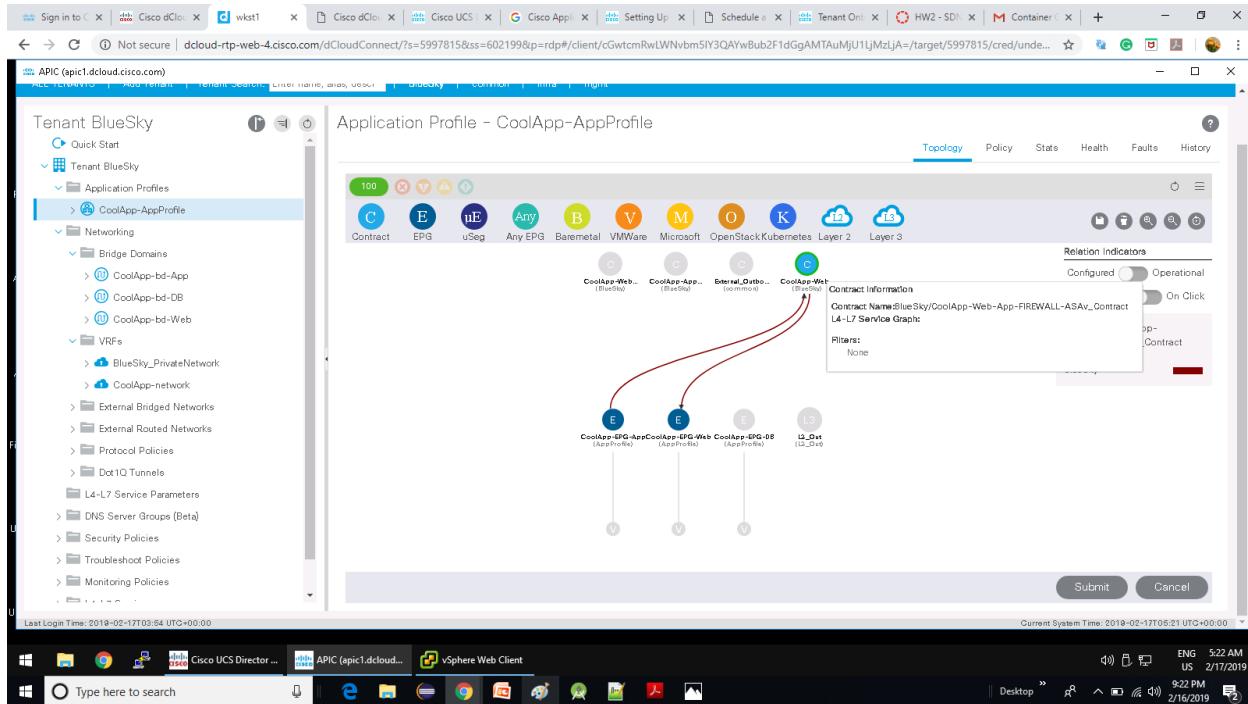
Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – CoolApp Application Profile

Screenshot of the Application Profile - CoolApp-AppProfile screen in APIC (epic1.dcloud.cisco.com).

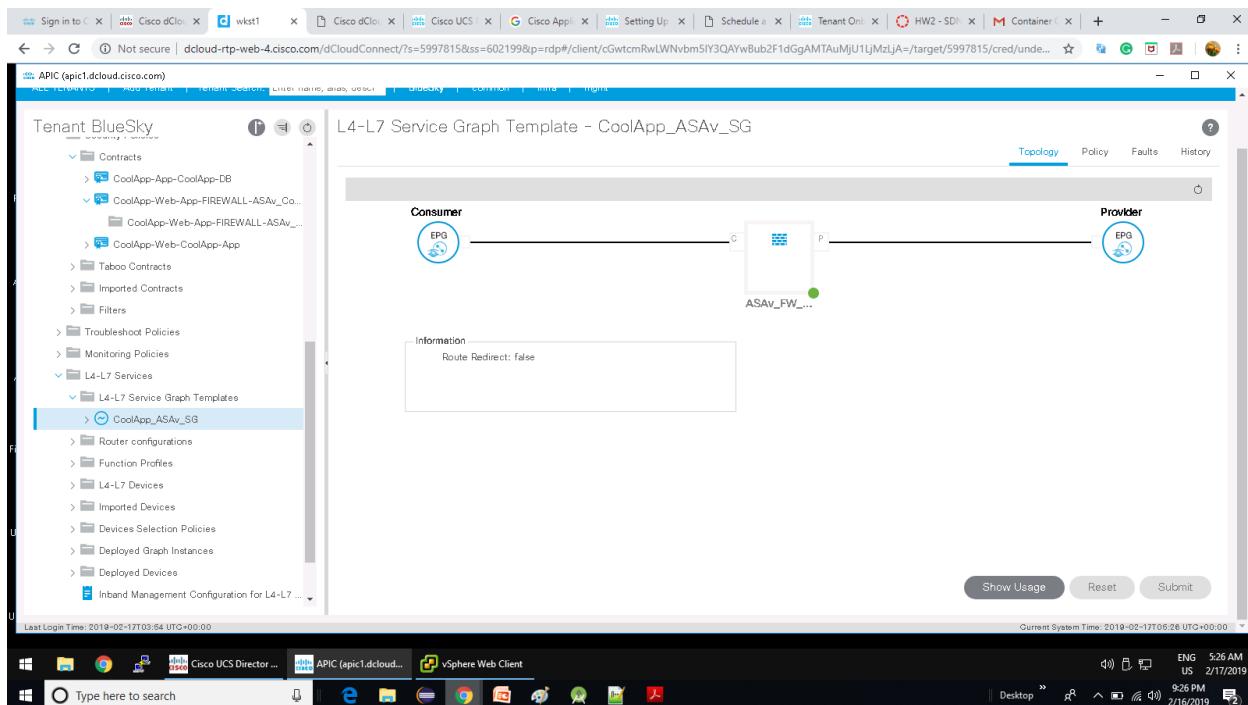
The left sidebar shows the Tenant BlueSky structure, including Application Profiles, Networking, and VRNs. The Application Profiles section is expanded, showing CoolApp-AppProfile.

The main pane displays the Application Profile - CoolApp-AppProfile screen. It shows a Topology view with various components like CoolApp-Web-Bluemix, CoolApp-App-External, General_Drivers-Bluemix, and CoolApp-Web-External. The topology diagram illustrates the connections between these components and their relationships (Configured, Operational, Show All, On Click).

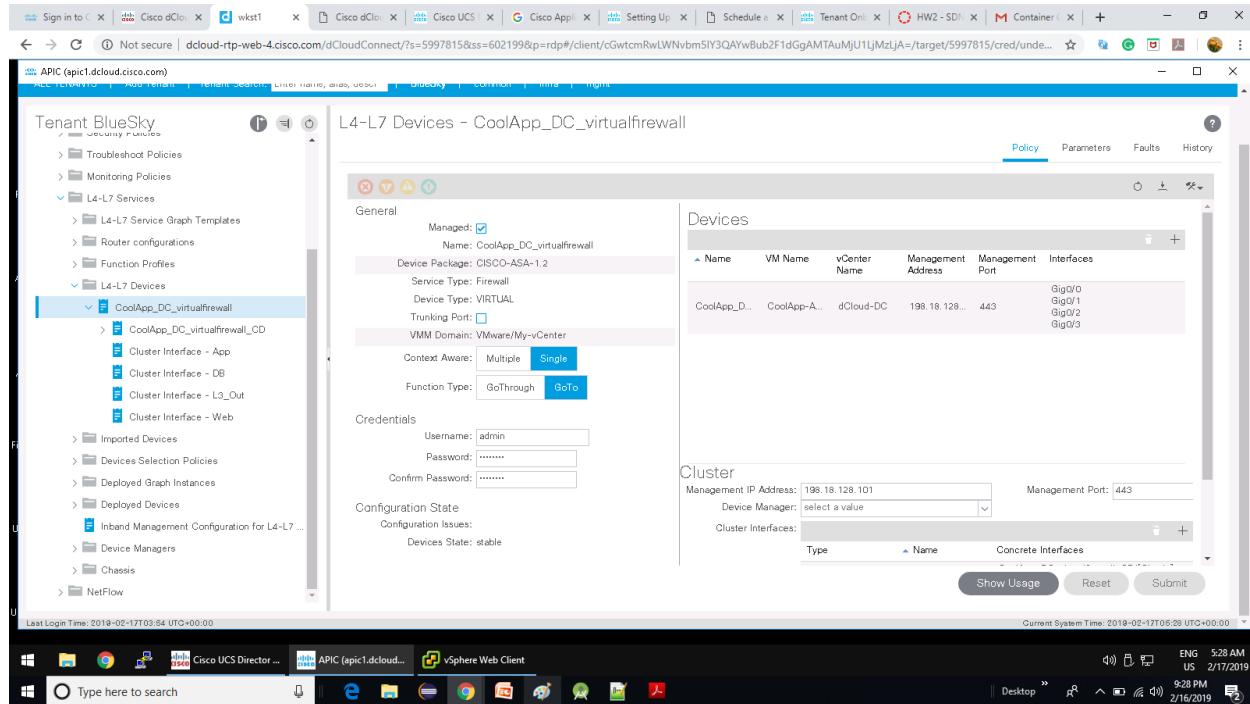
Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – CoolApp Application Profile for L4-L7 ASAv Service Graph



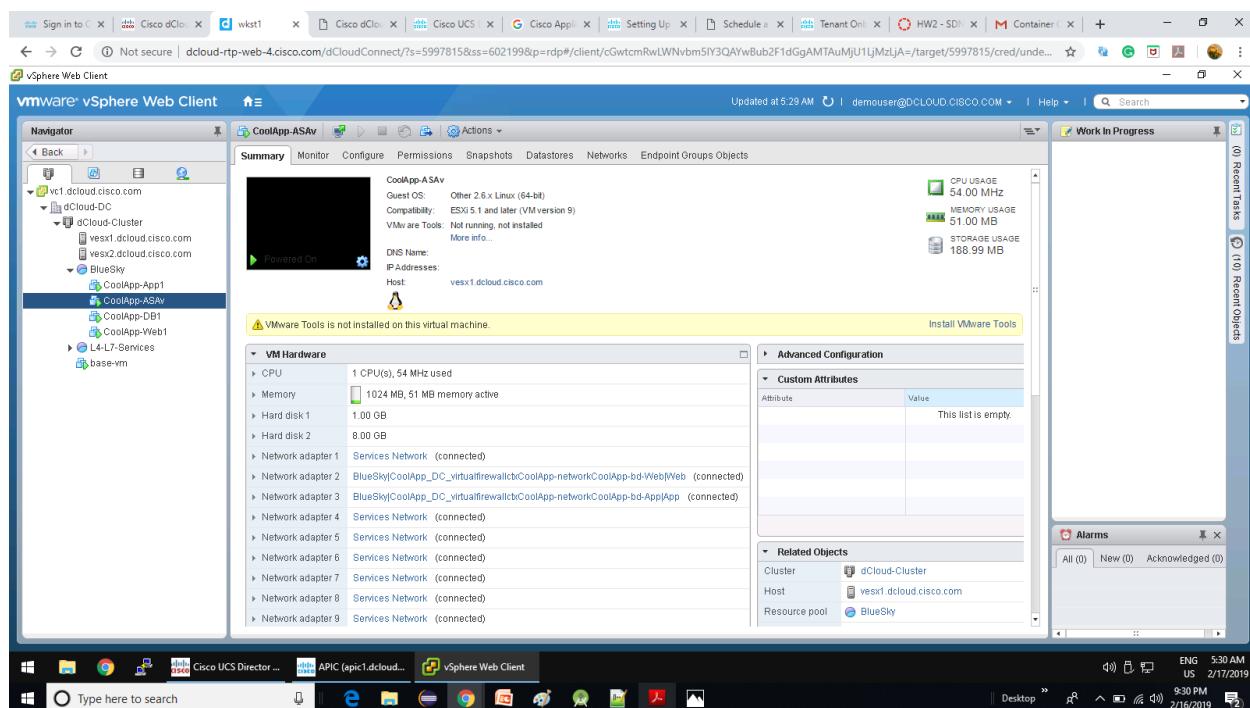
Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – L4-L7 ASAv Service Graph Template



Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – L4-L7 Devices – CoolApp DC Virtual Firewall



Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – vSphere Web Client Hardware details



Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – Cisco ASDM CoolApp firewall creation

The screenshot shows the Cisco ASDM 7.8(2) interface for ASA 192.168.128.101. The Device Information section displays host name (ciscoasa), ASA version (9.8(2)), and ASDM version (7.8(2)). The Interface Status section shows four interfaces: App (192.168.1.1/30, up/up, 0 kbps), Web (192.168.2.17/26, up/up, 0 kbps), management (192.168.128.101/10, up/up, 3 kbps). The Traffic Status section includes a graph of Connections Per Second Usage and another for 'management' Interface Traffic Usage (Kbps).

Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – UCS Director CoolApp Virtual Resources

The screenshot shows the Cisco UCS Director in dCloud interface. The left sidebar has icons for vDCs, VMs, Resource Pools, and Reports. The main area is titled 'Virtual Resources' and shows the 'Application Containers' tab selected. It displays a single container named 'CoolApp'. The bottom status bar shows the date and time as 2/16/2019 9:35 PM.

Scenario 3: Deploy an Application Container with L4-L7 Services (ASAv) – CoolApp Container creation Email

Container Created (Requester)

ucsd@dcloud.cisco.com
Container Name: BasicApp DR Enabled: No Container Template: L3-T1-T2-T3 Group: BlueSky Created: Sun Feb 17 03:38:15 UTC 2019 Leased Until: Service Request: 34 (

ucsd@dcloud.cisco.com
to me
Container Name: CoolApp DR Enabled: No Container Template: L3-T1-FW-T2-T3 Group: BlueSky Created: Sun Feb 17 04:46:34 UTC 2019 Leased Until: Service Request: 41 (Initiated by BlueSky)

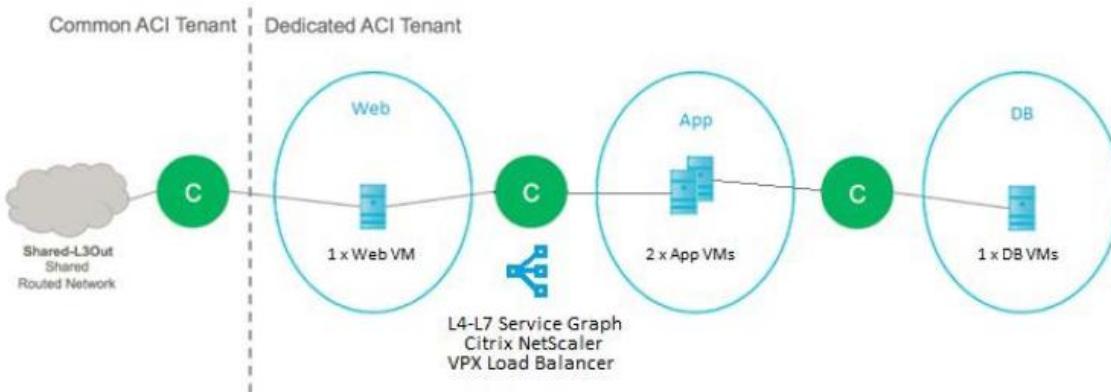
Cloud Name	VMID	VM Name	Status	IP Address	Provisioned Time
VMware	79	CoolApp-ASAv	ON	198.18.128.101	Sun Feb 17 04:50:43 UTC 2019
VMware	80	CoolApp-Web1	ON	198.18.2.18	Sun Feb 17 05:03:56 UTC 2019
VMware	81	CoolApp-App1	ON	192.168.1.2	Sun Feb 17 05:04:52 UTC 2019
VMware	82	CoolApp-DB1	ON	192.168.1.6	Sun Feb 17 05:05:49 UTC 2019

No recent chats
Start a new one

VM Name: CoolApp-ASAv
VM ID: 79
VM Type: ASAv
OS: Other 2.6.x Linux (64-bit)
Hostname:
Status: ON (poweredOn)
Disk Size: 0.18 GB Committed, 8.81 GB Uncommitted
Memory: 1 GB (1 Reserved)
CPU: 1 X 2.7 GHz (1 Reserved)

Type here to search Desktop 10:39 PM 2/16/2019

Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer)



Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – Workflow

The 3 Tier App L3Out LB workflow performs the following steps:

- Creates a container in UCS Director and allocates resources.
- Creates the APIC objects – Application Profile, private network, Bridge Domains and Contracts. New Port Profiles are automatically propagated to the VMware Distributed Switch.
- Creates the VM for each application in VMware, connecting each to the relevant Port Profile for its tier.
- Creates a child workflow that creates the L4-L7 Configuration (Load Balancer), and attaches it to the already available VPX virtual appliance.
- Sends confirmation email to Tenant Admin Email Address (from Scenario 1).

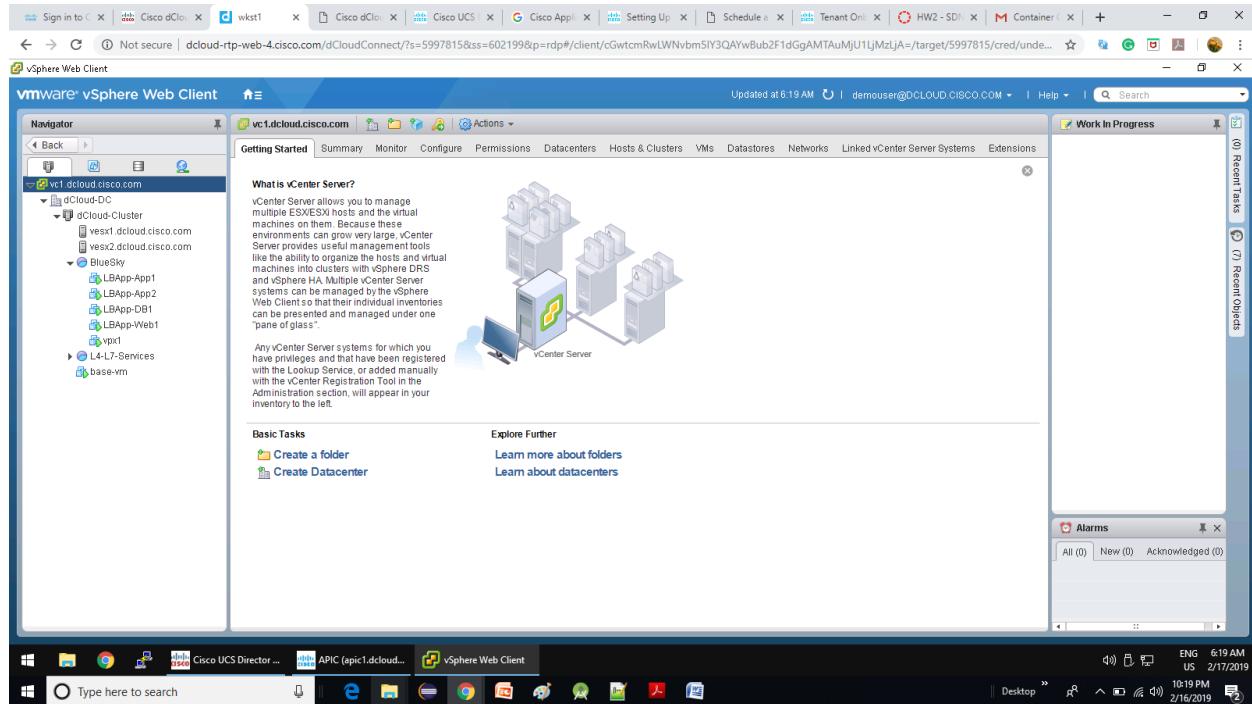
Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – Service Request Creation

The screenshot shows the Cisco UCS Director in dCloud interface. The main window displays a table of Service Requests. The columns include Service Request Id, Request Type, Initiating User, Group, Catalog/Workflow Name, Initiator Comments, Request Time, Request Status, and Rollback Type. There are 29 items listed, all marked as successful (green checkmarks). The 'Service Requests' tab is selected. The status bar at the bottom right shows the date and time as 2/17/2019 6:07 AM.

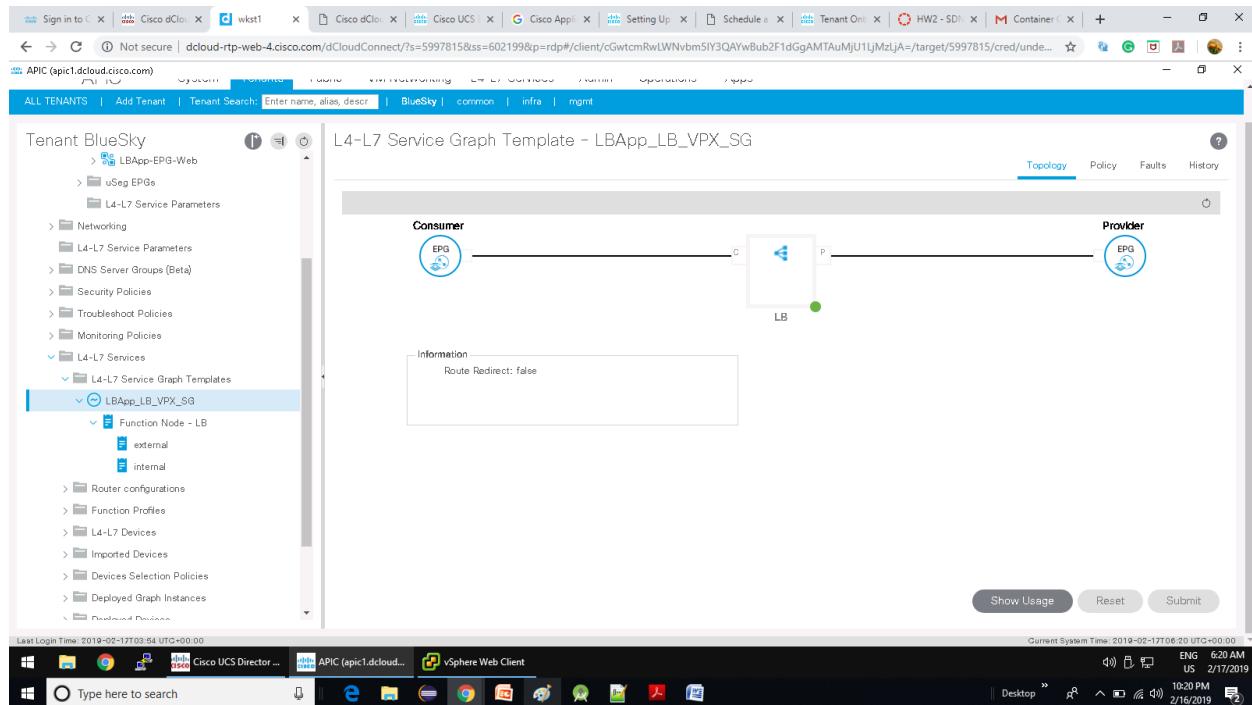
Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – LBApp Application Profile Topology

The screenshot shows the APIC (epic1.dcloud.cisco.com) interface. The left sidebar shows the Tenant BlueSky structure, including Application Profiles, Application EPGs (LBApp-EPG-App, LBApp-EPG-DB, LBApp-EPG-Web), uSeg EPGs, L4-L7 Service Parameters, Networking, DNS Server Groups (Beta), Security Policies, Troubleshoot Policies, Monitoring Policies, L4-L7 Services, and NetFlow. The main area displays the 'Application Profile - LBApp-AppProfile' topology. It features a central Layer 3 switch (L3_Out) connected to three Layer 2 switches (LBApp-EPG-App, LBApp-EPG-DB, LBApp-EPG-Web). Each Layer 2 switch is connected to a virtual machine (V) representing an L4-L7 service instance. The topology is color-coded by provider (blue for consumer, orange for provider). The status bar at the bottom right shows the date and time as 2/17/2019 6:17 AM.

Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – vSphere Web Client LBApp creation



Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – L4-L7 Service Graph Template for LB_App on APIC



Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – L4-L7 Devices virtuallb on APIC

L4-L7 Devices - LBApp_DC_virtuallb

Name	VM Name	vCenter Name	Management Address	Management Port	Interfaces
LBApp_DC...	vpx1	dCloud-DC	198.18.128.110	80	1_1 1_2 1_3 1_4

Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – Deployed Graph instances

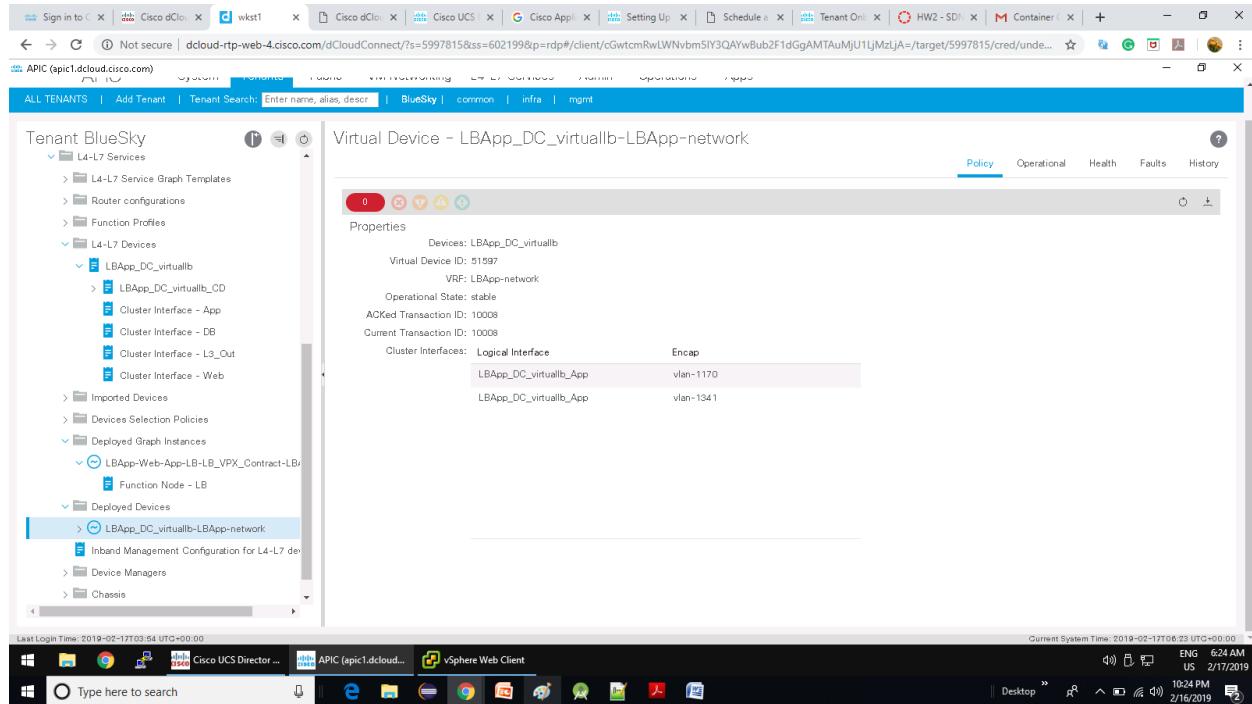
L4-L7 Service Graph Instance - LBApp-Web-App-LB-LB_VPX_Contract-LBApp_LB_VPX_SG-BlueSky

Consumer: EPG
Provider: LBApp-EP...

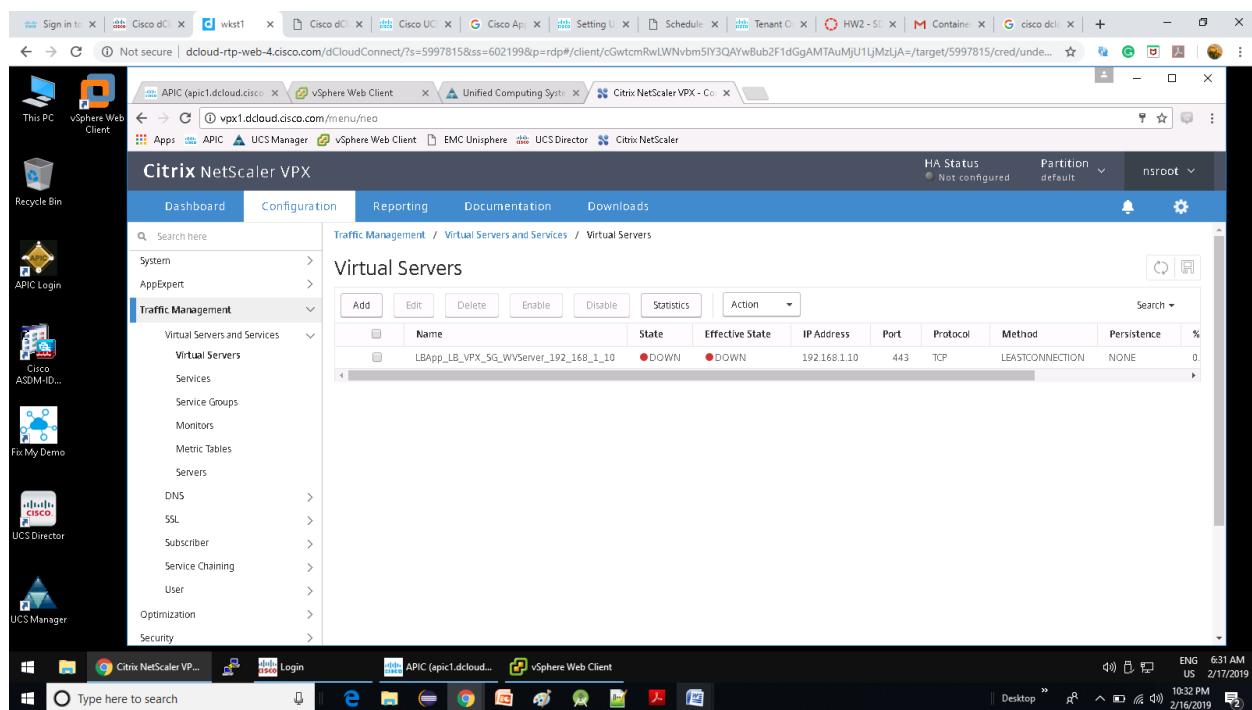
LB Information:

- Contract: BlueSky/LBApp-Web-App-LB-LB_VPX_Contract
- Graph: BlueSky/LBApp_LB_VPX_SG
- Node: LB
- Device Cluster: LBApp_DC_virtuallb
- Load Balancer:
- Policy based Routing: false
- Consumer Connector:
 - Type: bd
 - BD: BlueSky/LBApp-bd-Web
 - Cluster Interface: App
- Provider Connector:
 - Type: bd
 - BD: BlueSky/LBApp-bd-App

Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – Deployed devices Virtual Device network



Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – Citrix Netscaler VPX Virtual Servers



Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – UCS Director Virtual Resources

The screenshot shows the Cisco UCS Director in dCloud web interface. The main navigation bar includes tabs for Sign in to, Cisco dCloud, wkst1, Cisco dCloud, Cisco UC, Cisco Apic, Setting, Schedule, Tenant, HW2 - S1, Container, and cisco dCloud. The Application Containers tab is currently selected. On the left, there's a sidebar with icons for Virtual Resources, vDCs, VMs, VM Action Requests, Images, Resource Pools, and More Reports. The main content area displays a single application container named 'LBApp' with a green hexagonal icon. Below the container name, there's a link to its configuration details. The bottom of the screen shows a Windows taskbar with various icons and a system tray indicating the date and time as 2/16/2019 at 10:35 PM.

Scenario 4: Deploy a 3-Tier Application with L4-L7 Services (Load Balancer) – Container Creation Email for LBApp

The screenshot shows a Gmail inbox with one new message. The message is from 'ucscd@idcloud.cisco.com' and is titled 'Container Name: CoolApp DR Enabled: No Container Template: L3-T1-LB-T2-T3 Group: BlueSky Created: Sun Feb 17 04:46:34 UTC 2019 Leased Until: Service Request: 41'. The message body contains detailed information about the container, including its name, template, group, creation time, and lease details. Below the message, there's a table titled 'Virtual Machines' listing several VMs with their details like Cloud Name, VMID, VM Name, Status, and IP Address. At the bottom, there's a section for 'Network Interfaces' showing network adapter details. The bottom of the screen shows a Windows taskbar with various icons and a system tray indicating the date and time as 2/16/2019 at 10:40 PM.

Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – Workflow

The 3 Tier App with VMware and UCS workflow performs the following steps:

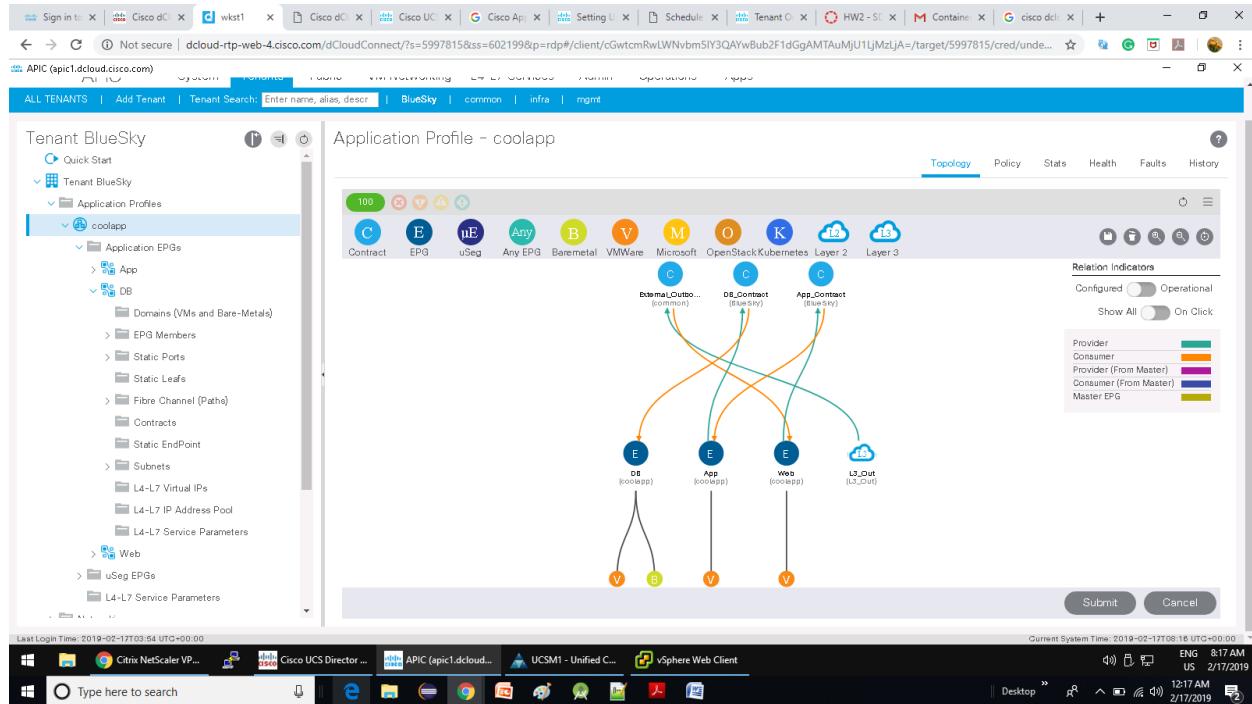
- Creates the APIC objects – Application Profile, Bridge Domains, EPGs and private network.
- Creates the VMs for the App and Web tiers in VMware.
- Creates a new Organisation in UCS Manager and also defines the database tier VLAN.
- Deploys a new Service Profile and associates it with a Server Pool, and attaches it to the database tier VLAN.

Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – Service creation of CoolApp

The screenshot shows the Cisco UCS Director in dCloud web interface. The main page displays a table of service requests under the 'Service Requests' tab. The table has columns for Service Request Id, Request Type, Initiating User, Group, Catalog/Workflow Name, Initiator Comments, Request Time, Request Status, and Rollback Type. Most requests are marked as successful (green checkmark). One request (Request ID 62) is marked as 'Complete Rollback'. The table shows 31 items, with a total of 31 items shown. The interface includes a sidebar with various icons and a navigation bar at the top.

Service Request Id	Request Type	Initiating User	Group	Catalog/Workflow Name	Initiator Comments	Request Time	Request Status	Rollback Type
85	Advanced	BlueSky	BlueSky	3 Tier App with VMware and UCS / Create 3 Ti...		02/17/2019 06:47:42 GMT+0000	✓	
84	Undo Workflow	BlueSky	BlueSky	Rollback APIC Container Setup (SR #2)		02/17/2019 06:37:31 GMT+0000	✓	
78	Advanced	BlueSky	BlueSky	APIC Container Configure Multiple Services		02/17/2019 05:51:43 GMT+0000	✓	
77	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 05:49:36 GMT+0000	✓	
76	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 05:49:36 GMT+0000	✓	
75	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 05:49:36 GMT+0000	✓	
74	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 05:49:36 GMT+0000	✓	
68	Advanced	BlueSky	BlueSky	APIC Container Setup Network Devices		02/17/2019 05:45:53 GMT+0000	✓	
66	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 05:43:40 GMT+0000	✓	
65	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 05:43:46 GMT+0000	✓	
64	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 05:43:46 GMT+0000	✓	
63	Advanced	BlueSky	BlueSky	APIC Container Tier Creation		02/17/2019 05:43:46 GMT+0000	✓	
62	Advanced	BlueSky	BlueSky	3 Tier App L3Out LB / APIC Container Setup		02/17/2019 05:42:46 GMT+0000	✓	Complete Rollback
61	Undo Workflow	BlueSky	BlueSky	Rollback APIC Container Setup (SR 41)		02/17/2019 05:30:43 GMT+0000	✓	
55	Advanced	BlueSky	BlueSky	APIC Container Configure Multiple Services		02/17/2019 04:57:03 GMT+0000	✓	
54	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 04:55:19 GMT+0000	✓	
53	Advanced	BlueSky	BlueSky	Create APIC L4L7 Device Interfaces		02/17/2019 04:55:19 GMT+0000	✓	

Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – CoolApp Application Profile Topology



Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – vSphere Web Client HW details

Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – Service Policy Contracts

Tenant BlueSky

Contract Subject - DB_Subject

Name	Tenant	Directives	State
Allow_MySQL	BlueSky		formed

Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – UCS Manager VLAN profiles

Name	ID	Type	Transport	Native	VLAN Sharing	Primary VLAN Name	Multicast Policy Name
VLAN 1343 [1343]	1343	Lan	Ether	No	None		
VLAN default (1)	1	Lan	Ether	Yes	None		
VLAN ESXi_Mgmt ...	101	Lan	Ether	No	None		
VLAN ESXi_vMotion ...	102	Lan	Ether	No	None		

Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – UCS Manager – Corresponding VLANS set in vNICs by the Servers CoolApp

The screenshot shows the UCS Manager interface with the following details:

- Left Sidebar:** Equipment, Servers, LAN, SAN, VM, Storage, Chassis, Admin.
- Current Path:** Servers / Service Profiles / root / Sub-Organizations / BlueSky / Service Profile CoolApp1 / iSCSI vNICs
- Actions:** Change Initiator Name, Reset Initiator Name.
- Service Profile Initiator Name:** IQN Pool Name: ; Initiator Name: ;
- iSCSI vNICs:**
 - Actions:** Add, Delete, Modify.
 - Table Headers:** Name, Overlay vNIC Name, iSCSI Adapter Policy, MAC Address.
 - Table Data:** No data available.
- Bottom Status Bar:** Logged in as admin@ucsm1.dckoud.cisco.com, System Time: 2019-02-17T08:24, Desktop, ENG 8:25 AM US 2/17/2019.

Scenario 5: Deploy a 3-Tier Application with a Physical Server (Emulated) – Servers CoolApp Service Profile

The screenshot shows the UCS Manager interface with the following details:

- Left Sidebar:** Equipment, Servers, LAN, SAN, VM, Storage, Chassis, Admin.
- Current Path:** Servers / Service Profiles / root / Sub-Organizations / BlueSky / Service Profile CoolApp1
- General Tab:**
 - Fault Summary:** 0 Critical, 0 Warning, 0 Minor, 0 Info.
 - Status:** Overall Status: OK.
 - Note:** The "Desired Power State" is the Power State of the server via UCSM. It may be different from the actual power state. For the actual server power state click the "Server Details" Tab.
 - Properties:**
 - Name: CoolApp1
 - User Label:
 - Description:
 - Owner: Local
 - Unique Identifier: Hardware Default
 - UUID Pool:
 - UUID Pool Instance:
 - Associated Server: sys/chassis-2/blade-8
 - Service Profile Template: dCloud-SP-Template
 - Template Instance: org-root/org-BlueSky/ls-dCloud-SP-Template
 - Actions:**
 - Set Desired Power State
 - Boot Server
 - Management IP Address
 - Maintenance Policy
- Bottom Status Bar:** Logged in as admin@ucsm1.dckoud.cisco.com, System Time: 2019-02-17T08:31, Desktop, ENG 8:33 AM US 2/17/2019.