



Sales & Partner Training
Worldwide Sales Strategy & Operations



EZ Cloud Release 1

Quickly get started with Enterprise Cloud Suite, UCS and ACI

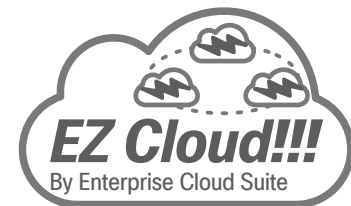
Hank Preston, ccie 38336

@hfpreston 

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Goals for “EZ Cloud”

- Customers are demanding solutions for enabling faster and more efficient IT Services
- Cisco has a portfolio of infrastructure, software, and services to aid customers
- Cisco’s Architectural Strength comes from the bringing our solutions together
- Provide a quick and easy way to provide the most common use cases needed for a Private Cloud Foundation

Agenda

- The EZ Cloud Intended User Experience
- Suggestions on having a Successful Cloud Project
- Getting your own EZ Cloud

- Find on the Community at <https://communities.cisco.com/docs/DOC-63857>

- Everything in the EZ Cloud Use Cases has been tested with shipping products
- This is not the ONLY way to do “Cloud”
- This provides a starting point for what is possible
- See Appendix Slides for Reference Details on replicating the Use Cases



The User Experience



Cisco Prime Service Catalog

Hank Preston

Onboard New Group into Cloud

▼ Onboard Group to ACI Cloud v2

- * New Group: Mobile Apps@csc.richfield.cisco.com
- * IaaS VDC Name: Sandbox
- * IaaS ANP Name: Sandbox

Create a new cloud tenant for the selected group. A new tenant will be created in the network fabric and have an initial General IaaS Project created for deploying workloads into.

Add to cart Cancel

“What do you mean people will use my cloud?”

UCS Director Automates Tenant and Network creation in ACI, vDC Policy and Creation in UCSD, and Network Configuraiton in UCS and vSphere

Step	Description	Timestamp
1	Initiated by cloudadmin...	11/09/2015 16:27:25
2	Get Group Details	11/09/2015 16:27:32
3	Basic User Name CleanUp.js Formatted Name: MobileApps	11/09/2015 16:27:38
4	Basic User Name CleanUp.js Formatted Name: Sandbox-u2525	11/09/2015 16:27:41
5	Basic User Name CleanUp.js Formatted Name: Sandbox-u2525	11/09/2015 16:27:48
6	Child workflow (New ACI Tenant and Open...	
7	Convert dvPortGroup to Generic PortGroup	
8	Convert dvPortGroup to Generic PortGroup	
9	Convert dvPortGroup to Generic PortGroup	
10	Get IP Address Range	
11	CreateStaticIPPoolPolicy custom task	
12	Child workflow (New 3 Tier vDC)	
13	Basic User Name CleanUp.js	
14	Basic User Name CleanUp.js	
15	Basic User Name CleanUp.js	
16	Child workflow (Add VLAN to UCS Central ...)	
17	Child workflow (Add VLAN to UCS Central ...)	
18	Child workflow (Add VLAN to UCS Central ...)	
19	Complete	

Each new Group gets a simple 3 Tier Cloud Environment supported by ACI

The screenshot displays the Cisco ACI management interface. The top navigation bar includes tabs for SYSTEM, TENANTS, FABRIC, VM NETWORKING, L4-L7 SERVICES, ADMIN, and OPERATIONS. The main content area is titled 'Application Profile - Sandbox-u2525'. On the left, a tree view shows the configuration hierarchy under 'Tenant MobileApps', including 'Application Profiles', 'Sandbox-u2525', 'Application EPGs', 'EPG app', 'EPG data', 'EPG web', 'L4-L7 Service Parameters', 'Networking', 'Bridge Domains', 'Sandbox-u2525', 'DHCP Relay Labels', 'L4-L7 Service Parameters', 'Subnets', '10.139.26.113/28', 'ND Proxy Subnets', 'Private Networks', 'External Bridged Networks', 'External Routed Networks', 'Router Configuration', 'Protocol Policies', 'L4-L7 Service Parameters', 'Security Policies', 'Troubleshoot Policies', 'Monitoring Policies', and 'L4-L7 Services'. The right pane shows the 'Application Profile - Sandbox-u2525' configuration page with tabs for TOPOLOGY, POLICY, OPERATIONAL, STATS, HEALTH, FAULTS, and HISTORY. The TOPOLOGY tab is active, displaying a diagram where a central 'Sandbox-u2525' application profile icon is connected to three 'EPG' (Endpoint Group) icons labeled 'app', 'data', and 'web'.

New VLANs created in UCS Central for each EPG in the new vDC


The screenshot displays the Cisco UCS Central web interface. At the top, the 'UCS Domains Fault Summary' shows 1 error, 31 warnings, 2 errors, and 25 alerts. The navigation menu includes Domains, Servers, Network, Storage, Operations Management, Statistics, Logs and Faults, Administration, and Import. The left-hand navigation tree is expanded to 'Network' > 'Policies' > 'vNIC Templates', with 'g-VM-TRAFFIC-A' selected. The main content area shows the configuration for 'g-VM-TRAFFIC-A' under the 'vNIC Interfaces' tab. A table lists three interfaces with their respective Native VLANs.

Name	Native VLAN
Sandbox-u2525app	no
Sandbox-u2525data	no
Sandbox-u2525web	no

Deploy Virtual Machines ✕

▼ New Virtual Machine Details

- * Number of VMs
- * Project
- * Operating System
- * Application Tier
- * Performance Tier
- * VM Label



Deploy one or more new virtual machines into an existing project.

Deploy new virtual machines into an existing project based on providing some basic details on your requirements.

Choose from one of several operating system options including both Windows and Linux based solutions.

Your new VMs can be deploying into the Web, Application, or Data Tiers of your projects.

Select from the following Performance Tiers.

	vCPU	vRAM
Standard	1	1024 MB
Advanced	2	2048 MB
Extreme	2	4096 MB

“Give me VMs... the work horse of IT”

View and Manage Virtual Machines

Virtual Machine

Refresh Save Settings

Show **Advanced Filter**

VDC Survey + Go Clear Filter

Display Name	UCSD Name	Host Name	IP Address	VM ID	ICFD VM ID	vCenter VM ID
▶ u2562	Survey Web Form	u2562	10.139.27.7	654	465	vm-1207
▶ u2557	Survey Web Form	u2557	10.139.27.6	653	463	vm-1206
▶ u2554	Ballot Stuffing App	u2554	10.139.26.211	652	464	vm-1205

◀ ◁ 1 ▷ ▶

Row 1 - 3 of 3

u2562 Survey Web Form u2562 10.139.27.7 654 465

Power Off VM Reboot VM Shutdown VM Guest More

- Add vNIC
- Clone VM
- Create VM Disk
- Create VM Snapshot
- Delete VM Snapshot
- Delete vNIC
- Migrate VM to Public Cloud
- Reset VM

Additional Information VM Network Interface VM Datastore

Name UCSD:PC1::u2562

Host Name u2562

VM ID 654

With Ownership

Form

u2557 Survey Web Form u2557 10.139.27.6 653 463

Use Case: Order new Virtual Machines

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ACI recognizes them in the correct EPGs

Application EPG - EPG web

POLICY										OPERATIONAL										STATS										HEALTH										FAULTS										HISTORY									
CLIENT END-POINTS										CONTRACTS										CONTROLLER END-POINTS																																							
END POINT	MAC	IP	LEARNING SOURCE	HOSTING SERVER	REPORTING CONTROLLER NAME	INTERFACE	ENCAP	MULTICAST ADDRESS	100																																																		
u2562	00:50:56:...	---	learned vmm	cloud-esxd2.csc.richfield...	cloud-vce...	10.136.10.102 (vmm) Node-101-102/cloud-fib ...	vlan-1144	---																																																			
u2557	00:50:56:...	---	learned vmm	cloud-esxd1.csc.richfield...	cloud-vce...	10.136.10.102 (vmm) Node-101-102/cloud-fib ...	vlan-1144	---																																																			

Application EPG - EPG app

POLICY										OPERATIONAL										STATS										HEALTH										FAULTS										HISTORY									
CLIENT END-POINTS										CONTRACTS										CONTROLLER END-POINTS																																							
END POINT	MAC	IP	LEARNING SOURCE	HOSTING SERVER	REPORTING CONTROLLER NAME	INTERFACE	ENCAP	MULTICAST ADDRESS	100																																																		
u2554	00:50:56:...	10.139.26.211	learned vmm	cloud-esxd2.csc.richfiel...	cloud-vce...	10.136.10.102 (vmm) Node-101-102/cloud-fi...	vlan-1145	---																																																			

Use Case: Order new Virtual Machines

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Prepare Project Tier for Bare Metal

☆☆☆☆☆ (0)

Prepare a Cloud Project Tier to support physical servers in addition to virtual servers.

[Order For Others](#) | [Order](#)

“But I need physical servers too...”

After determining the proper ACI Tenant, ANP, and EPG for the Project ...

Provision a new VLAN for Staticly Assigning Bare Metal Servers into the EPG

The screenshot displays a 'Service Request' window with a workflow log. The log is organized into two main sections: 'Overview' and 'Ownership'. The 'Overview' section contains details such as Request ID (2551), Request Type (Admin Workflow), Workflow Name (Prepare Project Tier for Bare Metal Server), and Request Status (Complete). The 'Ownership' section lists the Initiating User as hapresto@csc.richfield.cisco.com. To the right of these sections is a vertical timeline of 15 numbered steps, each with a timestamp. The steps describe the process from initiation to completion, including actions like 'Get vDC Details', 'Get IP Pool Policy', 'Add Physical Domain to EPG', and 'Add Static Path to EPG - FIA'. A 'Refresh' button is located at the top right of the log area, and a 'Close' button is at the bottom right.

Step	Action	Timestamp
1	Initiated by hapresto...	11/09/2015 20:34:28
2	Get vDC Details	11/09/2015 20:34:33
3	Get Group Details	11/09/2015 20:34:38
4	Get IP Pool Policy	11/09/2015 20:34:44
5	ACI Tenant Name Formated Name: MobileApps	11/09/2015 20:34:50
6	ACI Tenant	11/09/2015 20:34:53
7	Temp Get ANP	11/09/2015 20:35:00
8	TEMP - Get EPG	11/09/2015 20:35:07
9	Get VLAN	11/09/2015 20:35:12
10	VLAN Name Formated String: prj-SurveyAp-u2533data-bm	11/09/2015 20:35:15
11	Add Physical Domain to EPG	11/09/2015 20:35:28
12	Add Static Path to EPG - FIA	11/09/2015 20:35:34
13	Add Static Path to EPG - FIB	11/09/2015 20:35:40
14	Add VLAN to UCS Completed action	11/09/2015 20:35:48
15	Complete Completed successfully.	11/09/2015 20:35:50

Physical Domain for UCS added to the EPG

The new VLAN mapped to the EPG

The screenshot shows the Cisco ICM interface for a tenant named 'MobileApps'. The left-hand navigation pane shows a tree structure with 'Application Profiles' expanded to 'Application EPGs', which includes 'EPG app' and 'EPG data'. The main content area is titled 'Domains (VMs and Bare-Metals)' and contains a table with the following data:

DOMAIN PROFILE	DOMAIN TYPE	DEPLOYMENT IMMEDIACY	RESOLUTION IMMEDIACY	STATE	PORT ENCAP
VMware/acidvs-prod	VMM Domain	Immediate	Immediate	formed	
cloud-pod	Physical Domain	On Demand	On Demand	formed	

Static Bindings (Paths)

The screenshot shows the 'Static Bindings (Paths)' configuration page in Cisco ICM. It displays a table with the following data:

PATH	ENCAP	DEPLOYMENT IMMEDIACY	MODE
Node: Node-101-102			
Node-101-102/cloud-fia	vlan-403	Immediate	Tagged
Node-101-102/cloud-fib	vlan-403	Immediate	Tagged

This workflow is deploying a new Bare Metal Server into the Prepared VDC Tier.

Fairly typical Bare Metal Deployment from UCSD until moving to Production (ie EPG)

Workflow Status | Log | Objects Created and Modified | Input/Output

Service Request

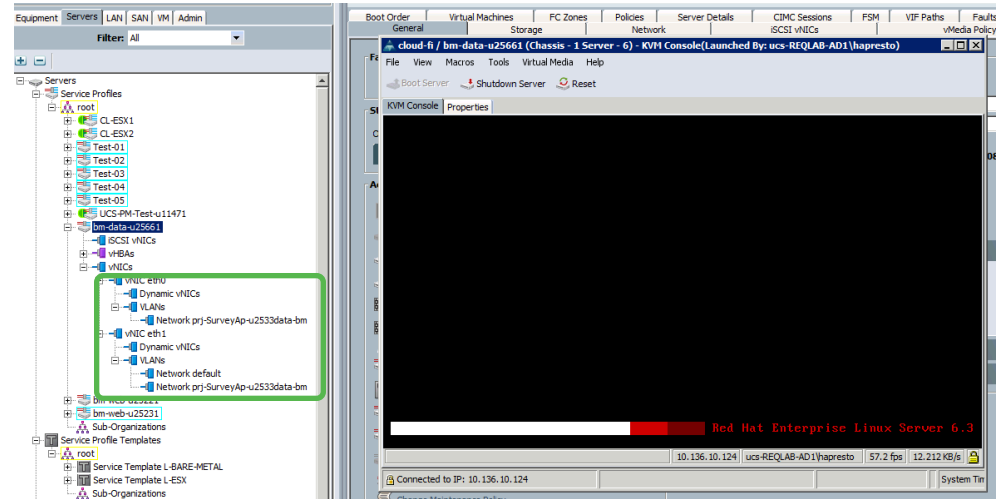
Status Refresh

▼ Overview

Request ID	2566	Current status for the service request.	
Request Type	Admin Workflow	2 Server Name Formatted Name: bm-data-u2566	11/09/2015 21:45:34
Workflow Name	Deploy Bare Metal Server to Project	3 Get IP Address	11/09/2015 21:45:40
Workflow Version Label	0	4 Create Service Profile	11/09/2015 21:45:55
Request Time	11/09/2015 21:45:22 GMT-0500	5 SAN Zoning	11/09/2015 21:46:22
Request Status	In Progress	6 Add VNX Host Initiator Entry	11/09/2015 21:47:29
Comments		7 Add VNX Host Initiator Entry	11/09/2015 21:48:40
▼ Ownership		8 Create VNX LUN	11/09/2015 21:51:55
Initiating User	hapresto@csc.richfield.cisco.com	9 Create VNX Storage Group	11/09/2015 21:52:41
		10 Add Hosts to VNX Storage Group	11/09/2015 21:53:49
		11 Add VNX LUN to Storage Group	11/09/2015 21:56:03
		12 Associate Service Profile	11/09/2015 22:00:37
		13 Setup PXE Boot (OS Type: RHEL63)	11/09/2015 22:01:01
		14 UCS Blade Power ON Action	11/09/2015 22:01:08
		15 Monitor PXE Boot	
		16 Assign Service Profile to Group	
		17 Unbind Service Profile	
		18 Move Server to Production Network	
		19 Remove from Build Network	
		20 Child workflow (Add DNS A Record to MS ...	
		21 Complete	

Close

Here in UCS Manager the new Bare Metal Server is seen connected to the correct VLAN



Use Case: Order New Bare Metal Server
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Here the new Bare Metal Server is seen in the Data EPG.

The screenshot shows the Cisco ICM interface for 'Application EPG - EPG data'. The left sidebar shows a tree view with 'EPG data' selected. The main content area displays a table with the following data:

END POINT	MAC	IP	LEARN/IN SOURCE	HOSTING SERVER	REPORT/ CONTROL NAME	INTERFACE	ENCAP	MULTICAST ADDRESS
EP-00-25-B5-1A:A...	00-25-B5-1A:A0:09	10.139.26.212	learned	---	---	Node-101-102/cl...	vlan-4...	---
EP-00-25-B5-1A:A...	00-25-B5-1A:A0:0A	---	learned	---	---	Node-101-102/cl...	vlan-4...	---

Suggestions on having a Successful Cloud Project

Start with the Use Cases

Cloud is about user experience.

Use Cases will drive everything else

Use Case: Onboard New Group

Automate the provisioning steps in the compute, storage and network layers of the cloud to enable a new end user group to login and begin consuming cloud resources.

Sample Request Interface

User Group

Sandbox Name

Automation Rough Cut

```
graph TD
    A[Provision Resources (i.e., Name/IP)] --> B[Create Network Tenant]
    B --> C[Create Network Profile]
    A --> D[Configure Compute Network]
    D --> E[Create Cloud Resources]
    E --> F[Create Cloud Policies]
    D --> G[Create Cloud VDC]
    G --> H[Ready for Use]
```

Use Case: Order a New Basic Project

Create a new basic three tier project environment for a group to deploy resources into. The project should implement standard traffic segmentation policies for web, app, and data tiers.

Sample Request Interface

User Group

Project Name

Automation Rough Cut

```
graph TD
    A[Provision Resources (i.e., Name/IP)] --> B[Find Network Tenant]
    B --> C[Create Network Profile]
    A --> D[Configure Compute Network]
    D --> E[Create Cloud Resources]
    E --> F[Create Cloud Policies]
    D --> G[Create Cloud VDC]
    G --> H[Ready for Use]
```

Use Case: Order New Virtual Machine

Enable End Users to Self-Service Order a Standard Virtual Machine. The new VM details will be determined based on basic user input.

Sample Request Interface

Operating System

Category*

Performance**

Quantity

Project

Automation Rough Cut

```
graph TD
    A[Determine VM Template] --> B[Clone Template]
    B --> C[Customize Guest]
    A --> D[Register DNS]
    D --> E[Notify User]
    E --> F[Ready for Use]
```

Use Case: Order New Bare Metal Server

Enable End Users to Self-Service Order a Standard Bare Metal Server. The new server details will be determined based on basic user input.

Sample Request Interface

Operating System

Category*

Performance**

Project

Automation Rough Cut

```
graph TD
    A[Provision Resources (i.e., Name/IP)] --> B[Create Service Profile]
    B --> C[Zone Storage Fabric]
    A --> D[Configure SAN Boot]
    D --> E[Configure PXE Session]
    E --> F[Image New Server]
    D --> G[Update SP Build > Prod]
    G --> H[Register DNS]
    H --> I[Notify User]
    I --> J[Ready for Use]
```

Plan your use cases

New Project Order Form

Project Name:

Group:

Web Server OS:

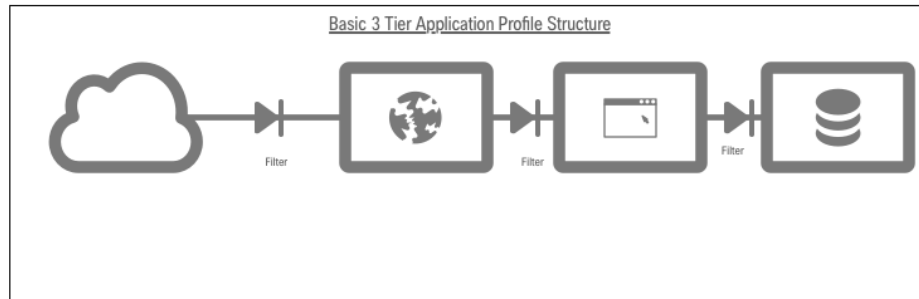
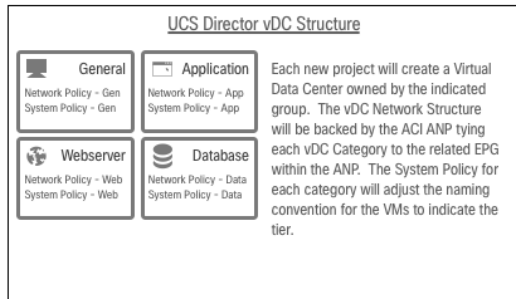
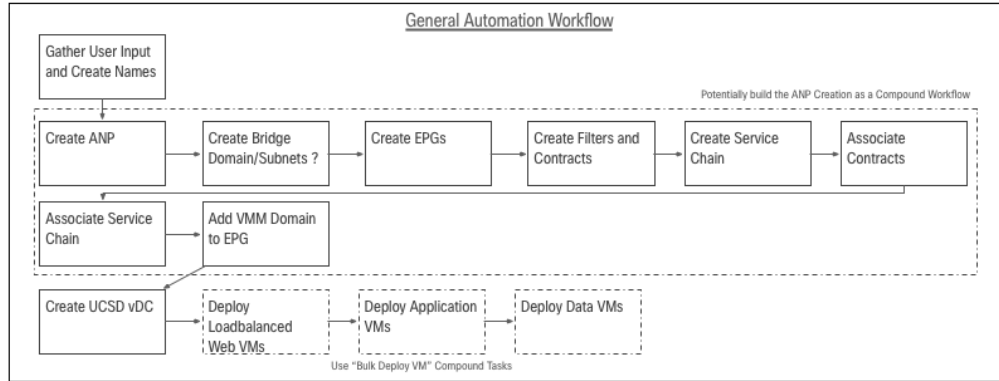
Web Server Quantity:

App Server OS:

App Server Quantity:

Data Server OS:

Data Server Quantity:



EZ Cloud Architecture – Release 1

For EZ Cloud Release 1 this is the basic component breakdown.



Application End User



Application Owner



Services Architect



Infrastructure Engineer

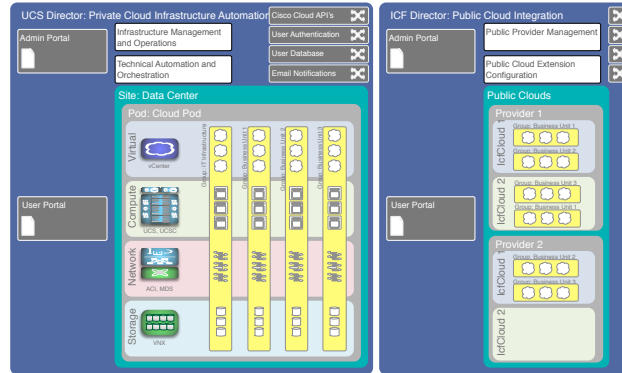


Operations User



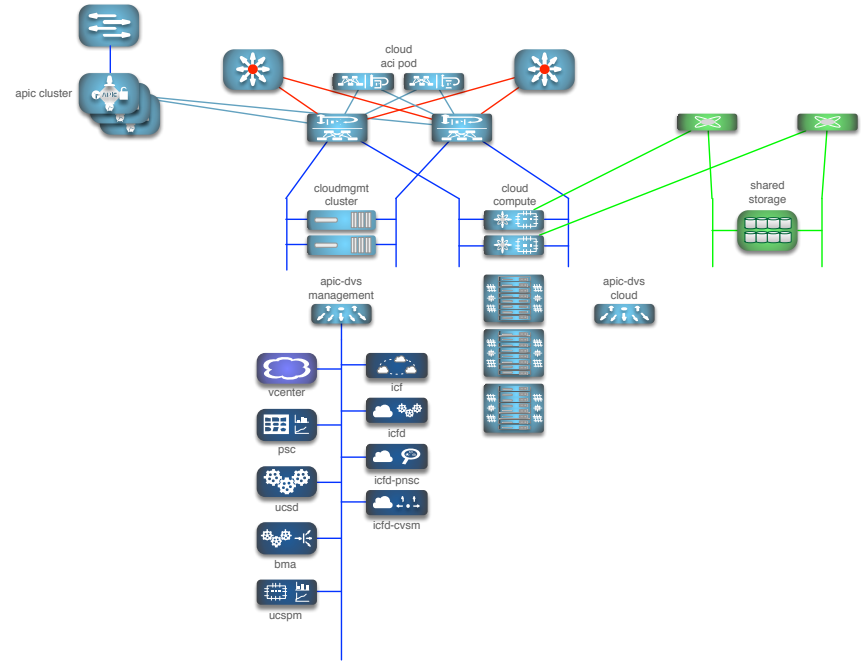
LDAP User Database
MS AD

SMTP Server



Infrastructure Architecture

With the Use Cases and Software Architecture determine the infrastructure needs.



Getting your own EZ Cloud

Contents

- General Info
- UCSD -> ACI Object Relationship Map
- ACI Configuration Notes
- Use Case Implementation Notes

- Find on the Community at <https://communities.cisco.com/docs/DOC-63857>

EZ Cloud Reference Material

EZ Cloud Type 1: Release 1 Use Cases

Use Case: Onboard New Group

Automate the provisioning steps in the compute, storage and network layers of the cloud to enable a new end user group to login and begin consuming cloud resources.

Sample Request Interface

User Group:

Sandbox Name:

Automation Rough Cut

```

graph TD
    A[Provision Resources  
(i.e., Name/IP)] --> B[Create Network Tenant]
    B --> C[Create Network Profile]
    C --> D[Configure Compute Network]
    D --> E[Create Cloud Resources]
    E --> F[Create Cloud Policies]
    F --> G[Create Cloud VDC]
    G --> H[Ready for Use]
    
```

Use Case: Order a New Basic Project

Create a new basic three tier project environment for a group to deploy resources into. The project should implement standard traffic segmentation policies for web, app, and data tiers.

Sample Request Interface

User Group:

Project Name:

Automation Rough Cut

```

graph TD
    A[Provision Resources  
(i.e., Name/IP)] --> B[Find Network Tenant]
    B --> C[Create Network Profile]
    C --> D[Configure Compute Network]
    D --> E[Create Cloud Resources]
    E --> F[Create Cloud Policies]
    F --> G[Create Cloud VDC]
    G --> H[Ready for Use]
    
```

Use Case: Order New Virtual Machine

Enable End Users to Self-Service Order a Standard Virtual Machine. The new VM details will be determined based on basic user input.

Sample Request Interface

Operating System:

Category*:

Performance**:

Quantity:

Project:

Automation Rough Cut

```

graph TD
    A[Determine VM Template] --> B[Clone Template]
    B --> C[Customize Guest]
    C --> D[Register DNS]
    D --> E[Notify User]
    E --> F[Ready for Use]
    
```

Use Case: Order New Bare Metal Server

Enable End Users to Self-Service Order a Standard Bare Metal Server. The new server details will be determined based on basic user input.

Sample Request Interface

Operating System:

Category*:

Performance**:

Project:

Automation Rough Cut

```

graph TD
    A[Provision Resources  
(i.e., Name/IP)] --> B[Create Service Profile]
    B --> C[Zone Storage Fabric]
    C --> D[Configure SAN Boot]
    D --> E[Configure PXE Session]
    E --> F[Image New Server]
    F --> G[Update SP Build > Prod]
    G --> H[Register DNS]
    H --> I[Notify User]
    I --> J[Ready for Use]
    
```

EZ Cloud Reference Material

EZ Cloud Release 1 Conceptual Cloud Architecture



Application End User



Application Owner



Services Architect



Infrastructure Engineering

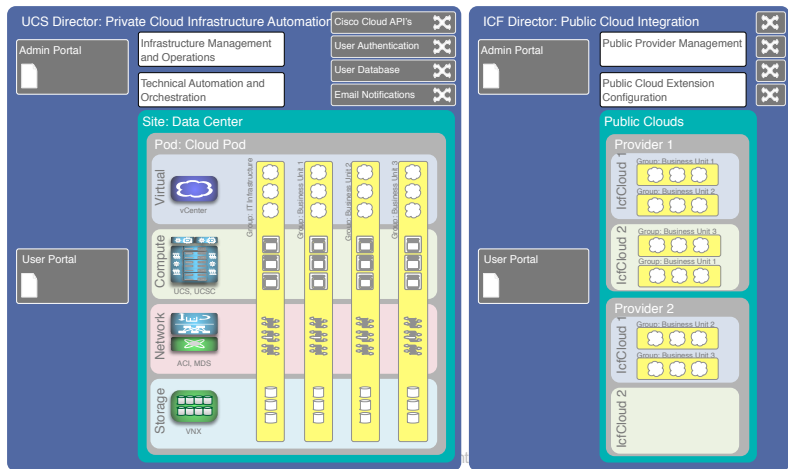


Operations User



LDAP User Database
X MS AD

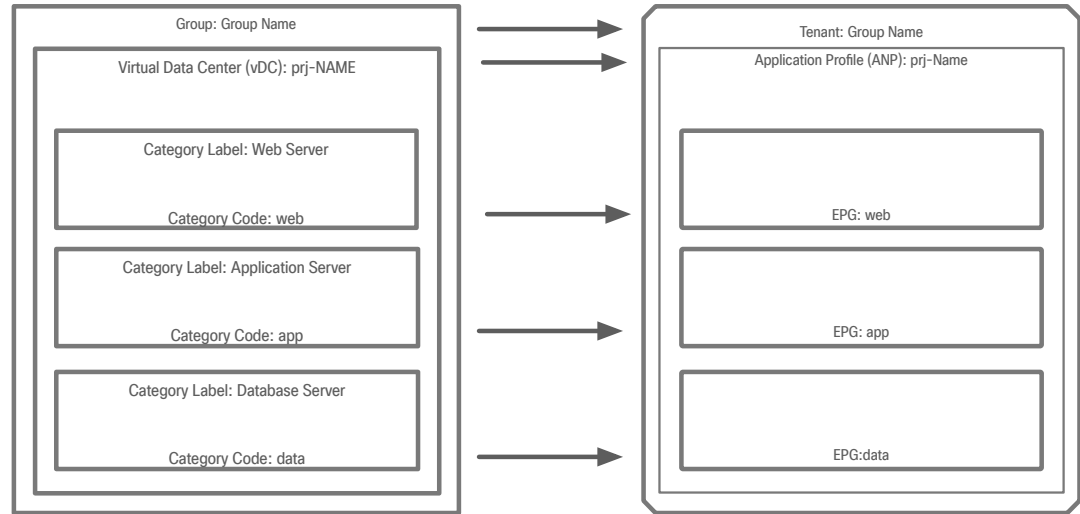
SMTP Server
X



EZ Cloud Reference Material

Logical Construct Mapping Between UCS Director and ACI

A basic association between UCS Director logical components and ACI Components is leveraged.

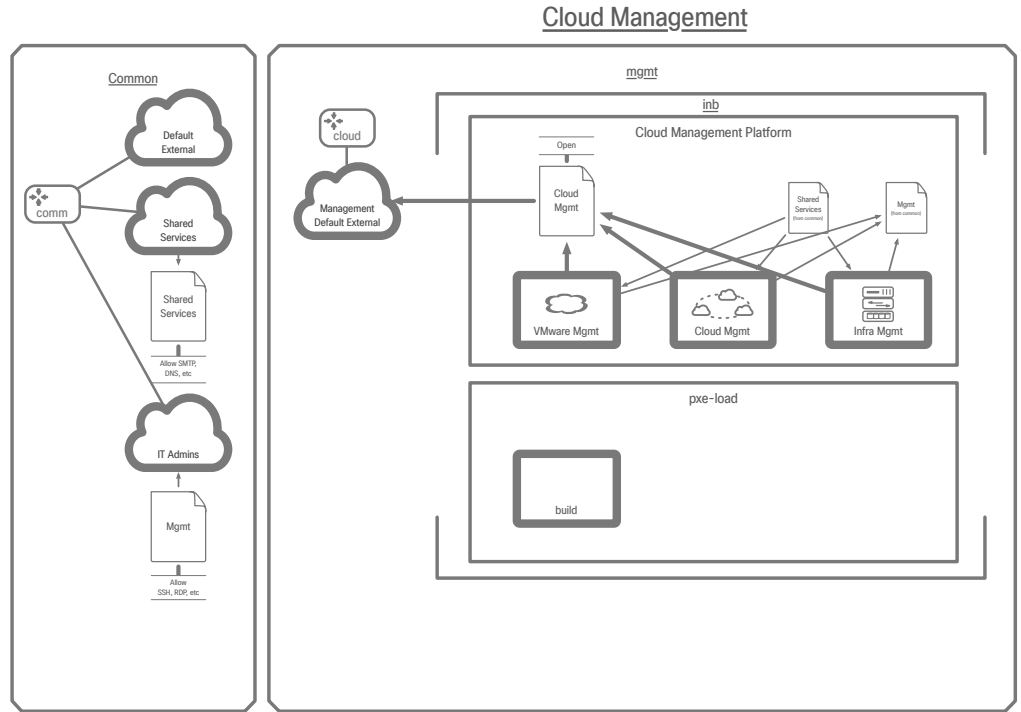


** “Category Code” is a modifiable field in UCSD. Highly recommend changing from defaults to these indicated*

EZ Cloud Reference Material

EZ Cloud Type 1 General ACI Fabric Expectations

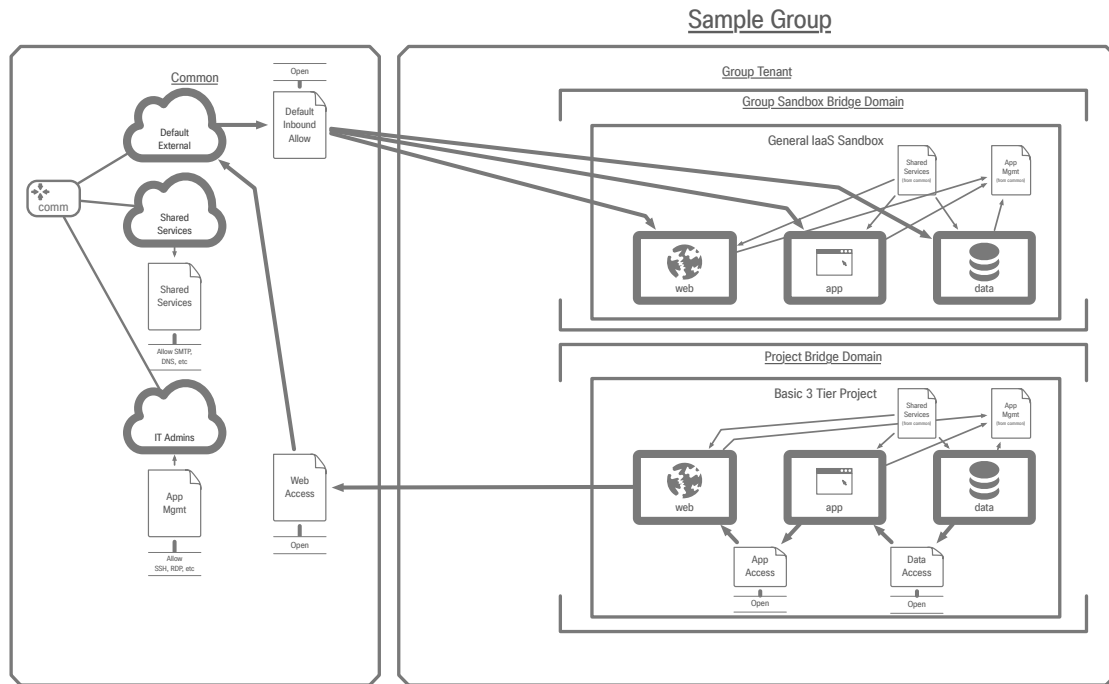
This is the basics for the ACI topology considered for EZ Cloud Type 1 Use Cases and examples.



EZ Cloud Reference Material

EZ Cloud Type 1 Group Onboarding and Project ACI Design

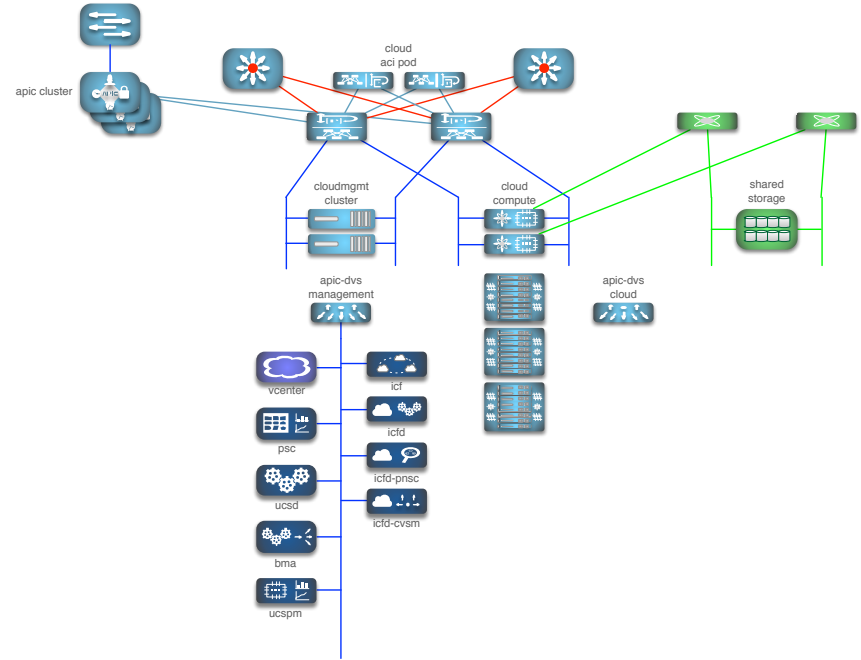
This represents the standard ACI Application Profiles for Groups Onboarded and Projects ordered with EZ Cloud Release 1 Use Cases.



EZ Cloud Reference Material

EZ Cloud Sample Physical Infrastructure Architecture

This is a sample physical architecture and topology for use with EZ Cloud Release 1 and Type 1 Use Cases.

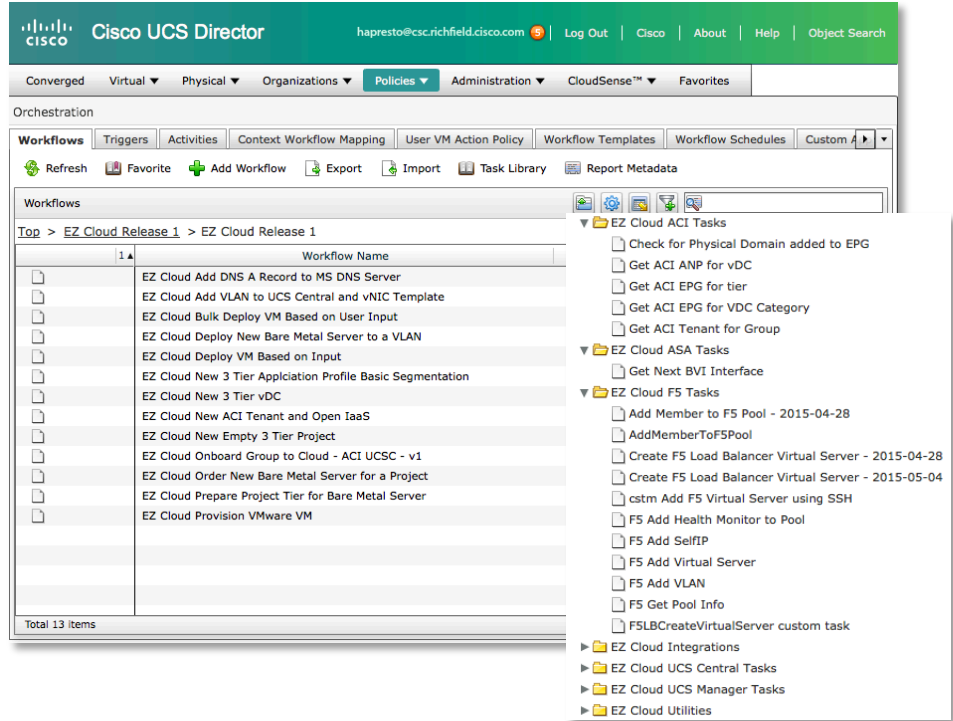


EZ Cloud Reference Material

EZ Cloud Release 1 Workflows and Custom Tasks

Soon to be posted to the Cisco Community Site...

- All workflows and tasks used in the Use Cases
- Instructions on standing up use cases in your lab or environment

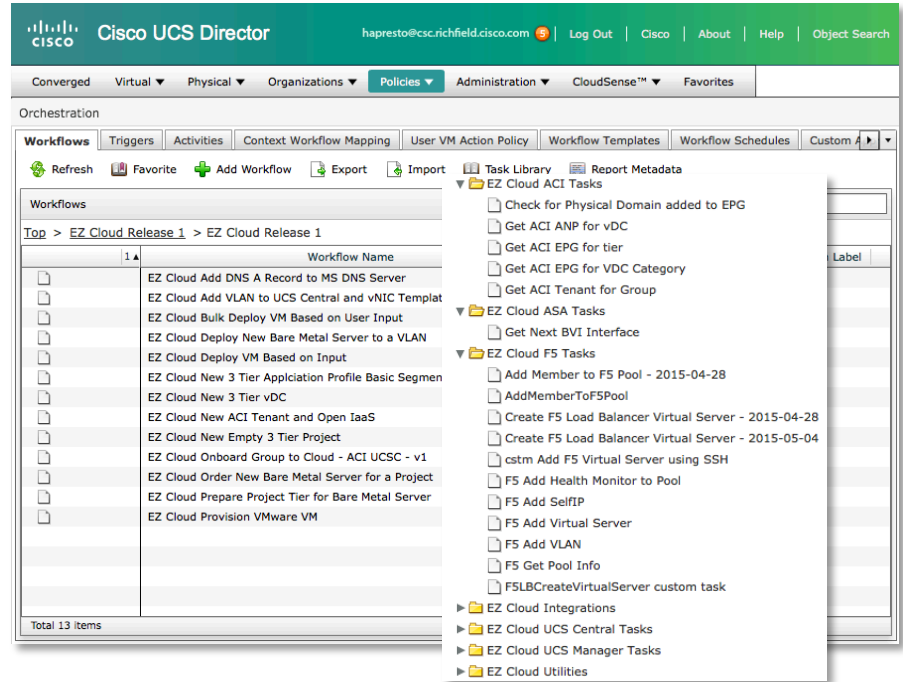


The screenshot displays the Cisco UCS Director interface. The top navigation bar includes 'Cisco UCS Director', a user profile 'hapresto@csc.richfield.cisco.com', and links for 'Log Out', 'Cisco', 'About', 'Help', and 'Object Search'. Below this is a secondary navigation bar with tabs for 'Converged', 'Virtual', 'Physical', 'Organizations', 'Policies', 'Administration', 'CloudSense', and 'Favorites'. The main content area is titled 'Orchestration' and contains a sub-menu with 'Workflows', 'Triggers', 'Activities', 'Context Workflow Mapping', 'User VM Action Policy', 'Workflow Templates', 'Workflow Schedules', and 'Custom'. A toolbar below the sub-menu includes 'Refresh', 'Favorite', 'Add Workflow', 'Export', 'Import', 'Task Library', and 'Report Metadata'. The 'Workflows' section is expanded to show a list of workflows under the path 'Top > EZ Cloud Release 1 > EZ Cloud Release 1'. The list contains 13 items, including tasks like 'EZ Cloud Add DNS A Record to MS DNS Server', 'EZ Cloud Add VLAN to UCS Central and vNIC Template', 'EZ Cloud Bulk Deploy VM Based on User Input', 'EZ Cloud Deploy New Bare Metal Server to a VLAN', 'EZ Cloud Deploy VM Based on Input', 'EZ Cloud New 3 Tier Application Profile Basic Segmentation', 'EZ Cloud New 3 Tier vDC', 'EZ Cloud New ACI Tenant and Open IaaS', 'EZ Cloud New Empty 3 Tier Project', 'EZ Cloud Onboard Group to Cloud - ACI UCSC - v1', 'EZ Cloud Order New Bare Metal Server for a Project', 'EZ Cloud Prepare Project Tier for Bare Metal Server', and 'EZ Cloud Provision VMware VM'. To the right of the workflow list, a tree view shows a hierarchy of tasks: 'EZ Cloud ACI Tasks' (with sub-tasks like 'Check for Physical Domain added to EPG', 'Get ACI ANP for vDC', 'Get ACI EPG for tier', 'Get ACI EPG for VDC Category', 'Get ACI Tenant for Group'), 'EZ Cloud ASA Tasks' (with 'Get Next BVT Interface'), 'EZ Cloud F5 Tasks' (with sub-tasks like 'Add Member to F5 Pool - 2015-04-28', 'AddMemberToF5Pool', 'Create F5 Load Balancer Virtual Server - 2015-04-28', 'Create F5 Load Balancer Virtual Server - 2015-05-04', 'cstm Add F5 Virtual Server using SSH', 'F5 Add Health Monitor to Pool', 'F5 Add SelfIP', 'F5 Add Virtual Server', 'F5 Add VLAN', 'F5 Get Pool Info', 'F5LBCreateVirtualServer custom task'), 'EZ Cloud Integrations', 'EZ Cloud UCS Central Tasks', 'EZ Cloud UCS Manager Tasks', and 'EZ Cloud Utilities'. The bottom of the workflow list indicates 'Total 13 Items'.

Workflow Import and Implementation Notes

Getting the Workflows and Custom Tasks

- Download the .wfdx file from the community
- <https://communities.cisco.com/docs/DOC-63857>
- Import into UCS Director



Use Case: Onboard New Group

- Parent Workflow “EZ Cloud Onboard Group to Cloud – ACI UCSC – v1”
 - This example uses UCS Central managed UCS. Modifying to use UCSM directly is an easy change
- Child Workflows
 - EZ Cloud New ACI Tenant and Open IaaS
 - EZ Cloud New 3 Tier vDC
 - EZ Cloud Add VLAN to UCS Central and vNIC Template

Workflow Details

Workflow Name EZ Cloud Onboard Group to Cloud - ACI UCSC - v1

Version 0

Description

Workflow to onboard a new group to the cloud. Includes creating new ACI Tenant and ANP for a Basic IaaS vDC, the vDC and Policies.

This version assumes the following for infrastructure:

Network Fabric - ACI
Compute - UCS Central Managed

Basic Fabric Structure aligning to EZ Cloud Type 1
(Shared L3 Out in Common Tenant, Single Context/VRF in

Workflow Context Any

This workflow shall be used in the specified context

Save as Compound Task

Publish Task outputs as Compound Task outputs

Always execute during System initialization

Save Options

Place in New Folder

Select Folder EZ Cloud Release 1

Use Case: Onboard New Group

Update Task: EZ Cloud New ACI Tenant and Open IaaS

- Open and edit task to identify your local ACI objects
- Task Inputs to Set
 - Subnet Pool – Where to provision new IP range
 - Default Contract – Each EPG in the Open IaaS ANP will consume this contract to enable access. Suggest it be a permit ip any policy. This needs to be provided by the External IP used for incoming traffic.
 - The Shared Private Network (Context) from common
 - The Shared L3 Out from Common
 - The VMM Domain in which to create the EPGs

Provide the values for the task inputs which are not mapped to workflow inputs.

Subnet Pool ACI Cloud - New Network Subnet Pool *

APIC Account

	APIC Account	Account Type	Pod	Device IP
<input checked="" type="checkbox"/>	cloud-apic1	APIC	ACI Cloud	10.136.10.10
<input type="checkbox"/>				
<input type="checkbox"/>				

Total 1 items

Default Contract

	Account Name	Tenant Name	Tenant Contracts
<input type="checkbox"/>	cloud-apic1	common	CloudAdmins-prj-fire
<input type="checkbox"/>	cloud-apic1	common	default
<input checked="" type="checkbox"/>	cloud-apic1	common	external_allow_all
<input type="checkbox"/>	cloud-apic1	common	CloudAdmins-prj-sky
<input type="checkbox"/>	cloud-apic1	common	management
<input type="checkbox"/>	cloud-apic1	common	shared-services

Total 37 items

Private Network

	Account Name	Tenant Name	Private Network	Description
<input checked="" type="checkbox"/>	cloud-apic1	common	cloud	
<input type="checkbox"/>	cloud-apic1	common	default	

Use Case: Onboard New Group

Update Task: EZ Cloud New 3 Tier vDC

- Open and edit task to identify local UCSD and Cloud Info
- Task Inputs to Set
 - vDC Profile – Template vDC Profile
 - Compute Policy Cluster to deploy new VMs onto
 - Compute Policy Resource Pool from the above cluster
 - Storage Policy Datastore to store new VMs on
 - AD Domain info to join windows server with (fill in something even if not joining domains)
 - End User Self Service Policy ID – The Policy ID Number for a policy to enable end user management of VMs

Provide the values for the task inputs which are not mapped to workflow inputs.

vDC Profile

Compute Policy Cluster

Compute Policy Resource Pool Resources

Storage Policy Datastore

Join Domain

Domain Username

Domain Password

End User Self Service Policy ID

Use Case: Onboard New Group

Update Task: EZ Cloud Add VLAN to UCS Central and vNIC Template

- Open and edit task to identify local Compute details for new VLANs
- Modify all three instances
- Task Inputs to Set
 - Domain Group from UCSC where VLANs will be created
 - UCSC Account – Requires a Credential Policy be created and used to access the UCS Central account
 - UCSC Org Name – the org that will have permissions to the new vlan. Format of org-NAME
 - ESXA and B vNIC Template Names used with the Service Profiles for ESX Hosts.

Provide the values for the task inputs which are not mapped to workflow inputs.

Domain Group

Account Name	DN	Domain Group	Description
<input checked="" type="checkbox"/>	cloud-ucsc(ID: : domaingroup-rc	root	
<input type="checkbox"/>	cloud-ucsc(ID: : domaingroup-rc	Cisco-Live	
<input type="checkbox"/>	cloud-ucsc(ID: : domaingroup-rc	CL-Demo	

Total 3 Items

UCSC Account:

UCSC Org Name:

ESXA vNIC Template:

ESXB vNIC Template:

Use Case: Order a New Basic Project

- Parent Workflow “EZ Cloud New Empty 3 Tier Project”
 - This example uses UCS Central managed UCS. Modifying to use UCSM directly is an easy change
- Child Workflows
 - EZ Cloud Onboard Group to Cloud – ACI UCSC – v1 (Only if the Identified Group has not been onboarded)
 - EZ Cloud New 3 Tier Application Profile Basic Segmentation
 - EZ Cloud New 3 Tier vDC
 - EZ Cloud Add VLAN to UCS Central and vNIC Template

Workflow Details

Workflow Name EZ Cloud New Empty 3 Tier Project

Version 0

Description

Create a new "Project" for a group in the cloud. The Project will be represented by a vDC in UCSD and the network structure will be backed by an Application Profile in ACI. This version assumes the Compute Environment is managed by UCS Central.

The Project will be a standard 3 Tier (Web, App, Data) with standard segmentation (Web -> App -> Data) style.

Be sure to modify the inputs in the Child Workflows for Creating the New 3 Tier Application Profile, and Adding VLANs to UCS Central to reflect the infrastructure accounts and shared contacts from your

Workflow Context **Any** *

This workflow shall be used in the specified context

Save as Compound Task

Always execute during System initialization

Save Options

Place in New Folder

Select Folder **EZ Cloud Release 1** *

Use Case: Order a New Basic Project

Update Task: EZ Cloud New 3 Tier Application Profile Basic Segmentation

- Open and edit task to identify your local ACI objects
- Task Inputs to Set
 - The Private Network (Context) from common
 - Subnet Pool – Where to provision new IP range
 - Loadbalancer EPG – An EPG in Common where Loadbalancers could be deployed. If not using LBs, just select something.
 - Common Contract Management Services – A contract from the common tenant that will be provided by all new EPGs to allow inbound management access like SSH and RDP. This needs to be consumed by any EPGs (Internal or External) where management traffic will come from.

Provide the values for the task inputs which are not mapped to workflow inputs.

Private Network

Account Name	Tenant Name	Private Network	Description
<input checked="" type="checkbox"/>	cloud-apic1	common	cloud
<input type="checkbox"/>	cloud-apic1	common	default
<input type="checkbox"/>	cloud-apic1	common	I2-transit-routi
<input type="checkbox"/>	cloud-apic1	infra	overlay-1
<input type="checkbox"/>	cloud-apic1	Group7	Group7-VRF
<input type="checkbox"/>	cloud-apic1	mgmt	oob

Total 7 Items

Subnet Pool

Select... ACI Cloud - New Network Subnet Pool *

Loadbalancer EPG

Account Name	Tenant Name	Application I	EPG Name
<input checked="" type="checkbox"/>	cloud-apic1	common	shared-services
<input type="checkbox"/>	cloud-apic1	Skunkworks	IaAs-u1521
<input type="checkbox"/>	cloud-apic1	Skunkworks	IaAs-u1521
<input type="checkbox"/>	cloud-apic1	Skunkworks	IaAs-u1521
<input type="checkbox"/>	cloud-apic1	Skunkworks	prj-lust-u2392
<input type="checkbox"/>	cloud-apic1	Skunkworks	prj-lust-u2392

Total 103 Items

Common Contract Management Services

Account Name	Tenant Name	Tenant Contracts I
<input type="checkbox"/>	cloud-apic1	common
<input type="checkbox"/>	cloud-apic1	common

Use Case: Order a New Basic Project

Update Task: EZ Cloud New 3 Tier Application Profile Basic Segmentation

- Task Inputs to Set – con't
 - Common Contract Shared Services – A contract from the common tenant that will be consumed by all new EPGs for services like DNS and SMTP. Must be provided by the EPG (Internal or External) where services are provided.
 - External EPG Default Outside – This EPG will consume the contract provided by the Web Tier. Needs to be in the Common Tenant.
 - The L3 Out from Common and the Tenant (should be common) where the L3 Out is built
 - The VMM Domain in which to create the EPGs

Provide the values for the task inputs which are not mapped to workflow inputs.

Common Contract Shared Services

	Account Name	Tenant Name	Tenant Contracts I
<input type="checkbox"/>	cloud-apic1	common	CloudAdmins-prj-fire
<input type="checkbox"/>	cloud-apic1	common	default
<input type="checkbox"/>	cloud-apic1	common	external_allow_all
<input type="checkbox"/>	cloud-apic1	common	CloudAdmins-prj-sky
<input type="checkbox"/>	cloud-apic1	common	management
<input checked="" type="checkbox"/>	cloud-apic1	common	shared-services

Total 37 Items

External EPG Default Outside

	Account N	Tenant N	Outside N	Outside N	External I
<input checked="" type="checkbox"/>	cloud-apic1	common	Routed	cloud-out	all-ips
<input type="checkbox"/>	cloud-apic1	Group7	Routed	Group7-L3	L3-EPG
<input type="checkbox"/>	cloud-apic1	mgmt	Routed	mgmt_l3_ou	all_ips

Total 3 Items

L3 Out

	Account Name	Tenant Name	Tenant L3 Out Name
<input checked="" type="checkbox"/>	cloud-apic1	common	cloud-out
<input type="checkbox"/>	cloud-apic1	common	default
<input type="checkbox"/>	cloud-apic1	Group7	Group7-L3
<input type="checkbox"/>	cloud-apic1	mgmt	mgmt_l3_out

Use Case: Order a New Basic Project

Update Task: EZ Cloud New 3 Tier vDC

- Open and edit task to identify local UCSD and Cloud Info
- Task Inputs to Set
 - vDC Profile – Template vDC Profile
 - Compute Policy Cluster to deploy new VMs onto
 - Compute Policy Resource Pool from the above cluster
 - Storage Policy Datastore to store new VMs on
 - AD Domain info to join windows server with (fill in something even if not joining domains)
 - End User Self Service Policy ID – The Policy ID Number for a policy to enable end user management of VMs

Provide the values for the task inputs which are not mapped to workflow inputs.

vDC Profile

Compute Policy Cluster

Compute Policy Resource Pool Resources

Storage Policy Datastore

Join Domain

Domain Username

Domain Password

End User Self Service Policy ID

Use Case: Order a New Basic Project

Update Task: EZ Cloud Add VLAN to UCS Central and vNIC Template

- Open and edit task to identify local Compute details for new VLANs
- Modify all three instances
- Task Inputs to Set
 - Domain Group from UCSC where VLANs will be created
 - UCSC Account – Requires a Credential Policy be created and used to access the UCS Central account
 - UCSC Org Name – the org that will have permissions to the new vlan. Format of org-NAME
 - ESXA and B vNIC Template Names used with the Service Profiles for ESX Hosts.

Provide the values for the task inputs which are not mapped to workflow inputs.

Domain Group

Account Name	DN	Domain Group	Description
<input checked="" type="checkbox"/>	cloud-ucsc(ID: : domaingroup-rc	root	
<input type="checkbox"/>	cloud-ucsc(ID: : domaingroup-rc	Cisco-Live	
<input type="checkbox"/>	cloud-ucsc(ID: : domaingroup-rc	CL-Demo	

Total 3 Items

UCSC Account:

UCSC Org Name:

ESXA vNIC Template:

ESXB vNIC Template:

Use Case: Order New Virtual Machine

- Parent Workflow “EZ Cloud Deploy VM Based on Input”
 - There is also a “Bulk” version workflow that just loops over this workflow to deploy more than on VM
- Child Workflows
 - EZ Cloud Provision VMware VM
 - EZ Cloud Add DNS A Record to MS DNS Server

Workflow Details

Workflow Name EZ Cloud Deploy VM Based on Input

Version 0

Description

This workflow is used to provide an Advanced Catalog offer to end users where they indicate their needs for a VM OS, Application Tier, and Performance grade and then uses logic contained in EZ Cloud Custom Tasks to deduce the proper Standard Catalog and other details to deploy.

Be sure to look at the details on the Custom Tasks for selecting catalog to understand how it work.

Workflow Context *

Workflow Description

This workflow shall be used in the specified context

Save as Compound Task

Publish Task outputs as Compound Task outputs

Always execute during System initialization

Use Case: Order New Virtual Machine

Update Task: Select Catalog

- This is a Custom Task that uses logic to determine the Standard Catalog based on user input.
- The Custom Task supports 4 OS's and 3 Tiers by default. This can be changed fairly easy by editing the Custom Task.
- Task Inputs to Set
 - Provide the Standard Catalog ID for each of the potential combinations of User Inputs. Standard Catalog IDs can be found at Policies > Catalog and showing the ID field after clicking the “gear”

Provide the values for the task inputs which are not mapped to workflow inputs.

<input type="button" value="Revalidate"/>	
Windows 2008 R2 Web Catalog	<input type="text" value="4"/>
Windows 2008 R2 App Catalog	<input type="text" value="5"/>
Windows 2008 R2 Data Catalog	<input type="text" value="6"/>
Windows 2012 R2 Web Catalog	<input type="text" value="30"/>
Windows 2012 R2 App Catalog	<input type="text" value="31"/>
Windows 2012 R2 Data Catalog	<input type="text" value="32"/>
RedHat 6.3 Web Catalog	<input type="text" value="1"/>
RedHat 6.3 App Catalog	<input type="text" value="2"/>
RedHat 6.3 Data Catalog	<input type="text" value="3"/>
Ubuntu 14 Web Catalog	<input type="text" value="33"/>
Ubuntu 14 App Catalog	<input type="text" value="34"/>
Ubuntu 14 Data Catalog	<input type="text" value="35"/>

Use Case: Order New Virtual Machine

Update Task: Set vCPU and vRAM

- This is a Custom Task that uses logic to the CPU and RAM sizes based on Performance Level.
- The Custom Task supports 3 Performance Tiers by Default (Standard, Advanced, Extreme). This can be changed fairly easy by editing the Custom Task.
- Task Inputs to Set
 - Provide the vCPU Count and vRAM (in MB) for each of the performance tiers.

Provide the values for the task inputs which are not mapped to workflow inputs.

<input type="button" value="Revalidate"/>	
Standard vCPU Count	<input type="text" value="1"/> *
Advanced vCPU Count	<input type="text" value="2"/> *
Extreme vCPU Count	<input type="text" value="2"/> *
Standard vRAM	<input type="text" value="1024"/> *
Advanced vRAM	<input type="text" value="2048"/> *
Extreme vRAM	<input type="text" value="4096"/> *

Use Case: Order New Virtual Machine

Update Task: Add VM

- This is a slightly customized version of the OOB VMware Provisioning Workflow used by UCSD
- Task Inputs to Set
 - Each of the Listed Task Inputs needs to have some value assigned
 - Most of these Task Inputs are overridden by the Standard Catalog being deployed or the vDC Policies, but the Workflow needs initial values so fill in something

Override the values for the task inputs which are not mapped to workflow inputs.

VM Name or VM Prefix	<input type="text" value="vm"/>
Comment	<input type="text" value="vm"/>
	<input type="checkbox"/> Power off VM
New Disk	<input type="text" value="Unchanged"/>
VM Charge Frequency	<input type="text" value="Hourly"/>
VM Disks	<input type="text" value="1"/>
VM Networks	<input type="text" value="1"/>
Select VDC Category	<input type="text" value="Generic VM"/>
Select Windows License Pool	<input type="text" value="Windows 2008 R2"/>
Select Credentials Options	<input type="text" value="Do not share"/>
User ID	<input type="text" value="csc\administrator"/>
Password	<input type="text" value="*****"/>
	<input checked="" type="checkbox"/> Provision all disks in single datastore
	<input checked="" type="checkbox"/> Enable Guest Customization
	<input type="checkbox"/> Enable PostProvisioning CustomActions

Use Case: Order New Virtual Machine

Update Task: Add DNS Entry

- This is a Child Workflow that will add (and rollback) DNS A records to a Microsoft DNS Server
- If you have another DNS server delete this task completely and replace with your task.
- Task Inputs to Set
 - DNZ Zone to add the record to
 - DNS Server Name – short name, not FQDN
 - DNS Server IP
 - Power Shell Agent – FQDN of the Powershell Agent
 - Target Machine Name – Typically the DNS server itself, use FQDN
 - Run-as Credentials – must be an account with permissions to modify DNS

Provide the values for the task inputs which are not mapped to workflow inputs.

<input type="button" value="Revalidate"/>	
DNS Zone	<input type="text" value="csc.richfield.cisco.com"/> *
DNS Server Name	<input type="text" value="reqlab-ad1"/> *
DNS Server IP	<input type="text" value="10.101.128.101"/> *
Power Shell Agent	<input type="text" value="cloud-mgmt1.csc.richfield.cisco.com"/> *
Target Machine Name	<input type="text" value="reqlab-ad1.csc.richfield.cisco.com"/> *
Run-as User	<input type="text" value="administrator"/> *
Run-as Password	<input type="text" value="*****"/> *
Run-as Domain	<input type="text" value="csc.richfield.cisco.com"/> *

Use Case: Order New Bare Metal Server

- Parent Workflow “EZ Cloud Order New Bare Metal Server for a Project”
 - This use case will require the BMA to be already setup and have a functioning PXE Image working
 - The Child Workflows in this use case have some changes that need to be made to themselves, review all slides for this uses case closely
 - This Use Case relies heavily on the UCSD – ACI object mapping.
- Child Workflows
 - EZ Cloud Prepare Project Tier for Bare Metal Server
 - EZ Cloud Deploy New Bare Metal Server to a VLAN

Workflow Details

Workflow Name EZ Cloud Order New Bare Metal Server for a Project

Version 0

Description

This Parent Workflow is used as the basis for an Advanced Catalog offer for users to add a new Bare Metal Server to a Project/vDC. The user will provide **Workflow Description** Tier to add the server to.

You must update the Child Workflows contained within this workflow to use your ACI and UCS infrastructure as well as locally significant resources like VLAN Pools.

The Cloud Structure assumed here aligns to EZ Cloud Type 1
UCSD Group Name (without @domain.com) = ACI Tenant Name
vDC Name = ACI ANP Name

Workflow Context **Any** *

This workflow shall be used in the specified context

Save as Compound Task

Always execute during System initialization

Use Case: Order New Bare Metal Server

Update Workflow Input: Add VM

- The imported workflow is set to ONLY show an OS choice of “RHEL63” from the osTypeList from the BMA Servers.
- Edit the Workflow Input and adjust the filter or clear it to show the proper OS Choices for your setup
- This use case was designed to deploy a Windows or Linux Server, not an ESX host. It could be updated, but consider that when setting your OS filter.

Edit Entry

Input Label Operating System

Input Description

Optional

Input Type osTypesList

Value Restrictions

Admin Input Filter

Input Filter Criteria *

Enclose values within quotes to ensure matching case

Admin Input Value ▼

Use Case: Order New Bare Metal Server

Update Task: EZ Cloud Prepare Project Tier for Bare Metal Server

- This Child Workflow will Update the corresponding EPG in ACI to the selected vDC/Project Category that is indicated.
- This includes adding the needed Physical Domain and Static Pathing to the EPG.
- Task Inputs to Set
 - Physical Domain and Domain Identity – Pick the Physical Domain where your UCS FIs connect to the ACI Fabric. Pick in both of the inputs.
 - Static Path FIA and FIB – Pick the vPC Path for each FI. Be sure to pick the vPC path, and not a path to a single leaf. Look for “protpath” in the name

Provide the values for the task inputs which are not mapped to workflow inputs.

APIC Physical Server Domain

APIC Account Nar	Domain Type	Name
<input type="checkbox"/> cloud-apic1	Physical Domain	I2out-cloud-mgmt
<input type="checkbox"/> cloud-apic1	Physical Domain	phys
<input checked="" type="checkbox"/> cloud-apic1	Physical Domain	cloud-pod
<input type="checkbox"/> cloud-apic1	Physical Domain	management_domain
<input type="checkbox"/> cloud-apic1	VMM Domain	acidvs-mgmt
<input type="checkbox"/> cloud-apic1	VMM Domain	acidvs-prod

Total 6 Items

APIC Physical Domain Identify

Account Name	Physical Domain N	Domain Type
<input type="checkbox"/> cloud-apic1	I2out-cloud-mgmt	Physical Domain
<input type="checkbox"/> cloud-apic1	phys	Physical Domain
<input checked="" type="checkbox"/> cloud-apic1	cloud-pod	Physical Domain
<input type="checkbox"/> cloud-apic1	management_domain	Physical Domain

Total 4 Items

Static Path FIA

Account Nar	Static Path	Interf	Path 1
<input type="checkbox"/> cloud-apic1	topology/pod-1/paths-101/	I2out-clo	Virtual P
<input checked="" type="checkbox"/> cloud-apic1	topology/pod-1/protpaths-1	cloud-fia	Virtual P
<input type="checkbox"/> cloud-apic1	topology/pod-1/protpaths-1	cloud-fib	Virtual P
<input type="checkbox"/> cloud-apic1	topology/pod-1/protpaths-1	I2out-clo	Virtual P

Use Case: Order New Bare Metal Server

Update Task: EZ Cloud Prepare Project Tier for Bare Metal Server

- Task Inputs to Set – con't

- Bare Metal Server UCS Account
- VLAN Policy Name – The String name of the VLAN Policy (Policies > Virtual/Hypervisor > Network > VLAN Pool Policy) from where the new VLAN will be provisioned. This VLAN range must be already be mapped to the Physical Domain in APIC.

Provide the values for the task inputs which are not mapped to workflow inputs.

Total 4 Items

Static Path FIA

Account Name	Static Path	Interf	Path 1
<input type="checkbox"/> cloud-apic1	topology/pod-1/paths-101/	I2out-clo	Virtual P
<input checked="" type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-1	cloud-fia	Virtual P
<input type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-1	cloud-fib	Virtual P
<input type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-1	I2out-clo	Virtual P
<input type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-1	manager	Virtual P
<input type="checkbox"/> cloud-apic1	topology/pod-1/paths-102/	manager	Virtual P

Total 12 Items

Static Path FIB

Account Name	Static Path	Interf	Path 1
<input type="checkbox"/> cloud-apic1	topology/pod-1/paths-101/pathep-[I2out-cloud-mgr	I2c	Vir
<input type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-101-102/pathep-[cloud-fi	cl	Vir
<input checked="" type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-101-102/pathep-[cloud-fi	cl	Vir
<input type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-101-102/pathep-[I2out-cl	I2c	Vir
<input type="checkbox"/> cloud-apic1	topology/pod-1/protopaths-101-102/pathep-[manag	mi	Vir
<input type="checkbox"/> cloud-apic1	topology/pod-1/paths-102/pathep-[management_ee	mi	Vir

Total 12 Items

Bare Metal Server UCS Account:

VLAN Policy Name:

Use Case: Order New Bare Metal Server

Update Task: EZ Cloud Deploy New Bare Metal Server to a VLAN

- This Child Workflow provisions a new Service Profile, Zone's the SAN, Creates a new Boot LUN, PXE Images the new server, and moves the server onto the proper VLAN for the Project/Category identified.
- The Child Workflow itself will need to be updated for your environment. Details on that follow.
- Task Inputs to Set
 - LUN Size for the Boot Volume – You could update the Workflow to ask the user for this info if you wish
 - UCS Server Pool to find new physical blade
 - Service Profile Template: Details on setting up the template follow

Provide the values for the task inputs which are not mapped to workflow inputs.

Revalidate

LUN Size

25 GB

UCS Server Pool

	Account ↑	Organizat	Name	Assigned	Size
<input type="checkbox"/>	cloud-ucsm	org-root	Server Pool	0	0
<input checked="" type="checkbox"/>	cloud-ucsm	org-root	Server Pool	2	3
<input type="checkbox"/>	req-fi1	org-root/org	Server Pool	5	5

Total 3 Items

Service Profile Template

Select...

org-root/ls-L-BARE-METAL *

Use Case: Order New Bare Metal Server

Update Child Workflow: EZ Cloud Deploy New Bare Metal Server to a VLAN

- This Child Workflow provisions a new Service Profile, Zone's the SAN, Creates a new Boot LUN, PXE Images the new server, and moves the server onto the proper VLAN for the Project/Category identified.
- This Workflow is built expecting MDS as the SAN Fabric (1 A switch and 1 B switch) and a VNX as the Disk Array
- If your environment has a different storage environment, you will need to adjust this workflow to reflect your vendors and topology.

Workflow Details

Workflow Name EZ Cloud Deploy New Bare Metal Server to a VLAN

Version 0

Description

This workflow will deploy a new bare metal server using PXE to image with the selected OS and move the server after provisioning to a new "production" VLAN.

Common use case would be to use within a Parent Workflow where a new Bare Metal Server is deployed into a vDC/Project Tier/Category leveragin the Workflow "Prepare Project Tier for Bare Metal Server".

This workflow is built leveraging SAN boot to a VNX Array and MDS as the storage fabric. You must update these accounts and some

Workflow Context Any *

This workflow shall be used in the specified context

Save as Compound Task

Publish Task outputs as Compound Task outputs

Always execute during System initialization

Child Workflow: Deploy New Bare Metal Server to a VLAN

Update Tasks: Generic Configure SAN Zoning

- This single task zones both the A and B MDS Switches for the new Server
- Task Inputs to Set (For both Fabric A and B)
 - Storage Account Type (this example is built for VNX)
 - Storage Account Name
 - Storage FC Adapter (the port on the VNX)
 - Select Device (the MDS Switch)

Provide the values for the task inputs which are not mapped to workflow inputs.

Revalidate

Configure One to One zones

Activate Zone Set

Commit Zone

Fabric A

VSAN ID

VSAN ID associated with selected vHBA

Storage Account Type

EMC VNX Unified

Storage Account Name (Primary)

reqlab-vnx (ACI Cloud)

Storage FC Adapter (Primary)

Select... A-1 *

Device Alias FC Adapter

VNXA

Device Alias name for the FC Adapter.

Configure Secondary Head

Select Device

Select... 10.101.201.155 *

Configure Fabric B

Child Workflow: Deploy New Bare Metal Server to a VLAN

Update Tasks: VNX Host Initiator – Fab A and B

- Update both of these two tasks
- Task Inputs to Set (For both Fabric A and B)
 - Select EMC Account for VNX
 - For Fabric A Add Initiator to “New Host”
 - For Fabric B Add Initiator to “Existing Host”
 - SP Port

Provide the values for the task inputs which are not mapped to workflow inputs.

Revalidate

Select EMC Account reqlab-vnx *

Add Initiator To *

SP Port A-1 *

Initiator Type *

Failover Mode *

Child Workflow: Deploy New Bare Metal Server to a VLAN

Update Tasks: Remove from Build Network

- This task will remove the Build (PXE) Network VLAN from the Service Profile after it completes
- Task Inputs to Set (For both Fabric A and B)
 - Select VLAN – pick the UCS VLAN used for PXE imaging in your setup. This should have been part of the Service Profile Template vNIC config and is cleared

Provide the values for the task inputs which are not mapped to workflow inputs.

Revalidate

Select VLAN fabric/lan/net-mgmt_bma-pxe_build *

Child Workflow: Deploy New Bare Metal Server to a VLAN

Update Tasks: Add DNS Entry

- This is a Child Workflow that will add (and rollback) DNS A records to a Microsoft DNS Server
- If you have another DNS server delete this task completely and replace with your task.
- Task Inputs to Set
 - DNZ Zone to add the record to
 - DNS Server Name – short name, not FQDN
 - DNS Server IP
 - Power Shell Agent – FQDN of the Powershell Agent
 - Target Machine Name – Typically the DNS server itself, use FQDN
 - Run-as Credentials – must be an account with permissions to modify DNS

Provide the values for the task inputs which are not mapped to workflow inputs.

<input type="button" value="Revalidate"/>	
DNS Zone	<input type="text" value="csc.richfield.cisco.com"/> *
DNS Server Name	<input type="text" value="reqlab-ad1"/> *
DNS Server IP	<input type="text" value="10.101.128.101"/> *
Power Shell Agent	<input type="text" value="cloud-mgmt1.csc.richfield.cisco.com"/> *
Target Machine Name	<input type="text" value="reqlab-ad1.csc.richfield.cisco.com"/> *
Run-as User	<input type="text" value="administrator"/> *
Run-as Password	<input type="text" value="*****"/> *
Run-as Domain	<input type="text" value="csc.richfield.cisco.com"/> *

Use Case: Order New Bare Metal Server

Details on Service Profile Template Setup

- This use case will create a new SP from the template, PXE image the new server, and then unbind from the template to move to the proper network
- For the most part, setup the template as you want for your normal standards
- The Network and Boot configurations must be set appropriately though
- Network Policy
 - The first vNIC must be configured with the PXE VLAN supported by the BMA as the native VLAN
- Boot Policy
 - The boot policy should be set to PXE and then SAN boot

The screenshot displays the configuration interface for a Service Profile Template, divided into three main sections: Modify vNIC Template, Modify Boot Policy, and Target.

Modify vNIC Template:

- Name: g-PXE-A-B (Alpha-numeric and special character set, length <= 16 characters)
- Description: (Empty field, Length <= 128 characters)
- Fabric ID: Fabric A (Dropdown menu)
- Enable Failover

Modify Boot Policy:

- Add LAN Boot
- Primary vNIC: PXE (Alpha-numeric and special character)
- Secondary vNIC: (Empty field, Alpha-numeric and special character)
- Add SAN Boot
- Primary vHBA: vHBA-A (Alpha-numeric and special character)
- Secondary vHBA: vHBA-B (Alpha-numeric and special character set, length <= 16 characters)
- Add SAN Boot Target for Primary vHBA
- Primary Boot Target LUN: 0 (Accepts numeric value)
- Primary Boot Target WWPN: 50:06:01:61:3E:A0:17:8A (Accepts format (10 (or) 20 (or) 50 (or) 60 :00:00:00:00:00:00) and Hexadecimal in octants)
- Secondary Boot Target LUN: (Empty field, Accepts numeric value)
- Secondary Boot Target WWPN: (Empty field, Accepts format (10 (or) 20 (or) 50 (or) 60 :00:00:00:00:00:00:00) and Hexadecimal in octants)
- Add SAN Boot Target for Secondary vHBA
- Primary Boot Target LUN: 0 (Accepts numeric value)
- Primary Boot Target WWPN: 50:06:01:69:3E:A0:17:8A (Accepts format (10 (or) 20 (or) 50 (or) 60 :00:00:00:00:00:00:00) and Hexadecimal in octants)

Target:

- Adapter
- VM
- Template Type: Updating Template (Dropdown menu)
- VLANs: (Table with 2 columns: Name, Set as Native VLAN)

Name	Set as Native VLAN
mgmt_bma-pxe_build	true

Buttons: Submit, Close



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TOMORROW starts here.