

### 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

Order

#### 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

Order

#### 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

Order

#### 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

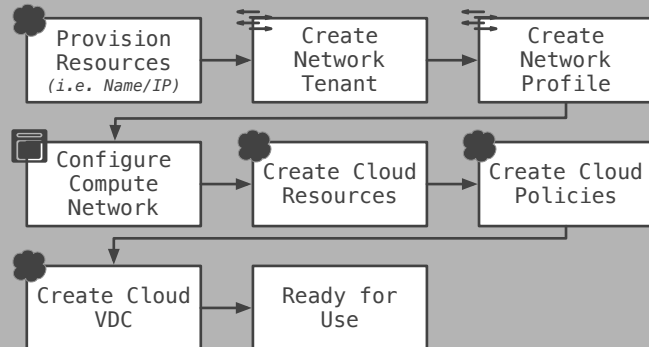
Category\*

Performance\*\*

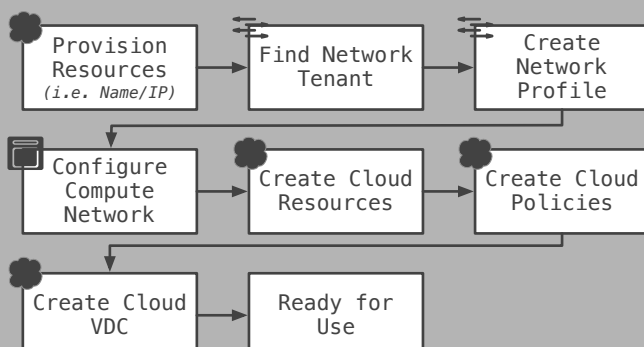
Project

Order

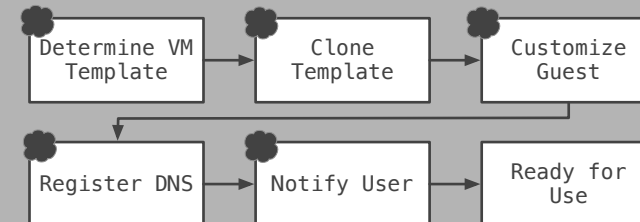
#### Automation Rough Cut



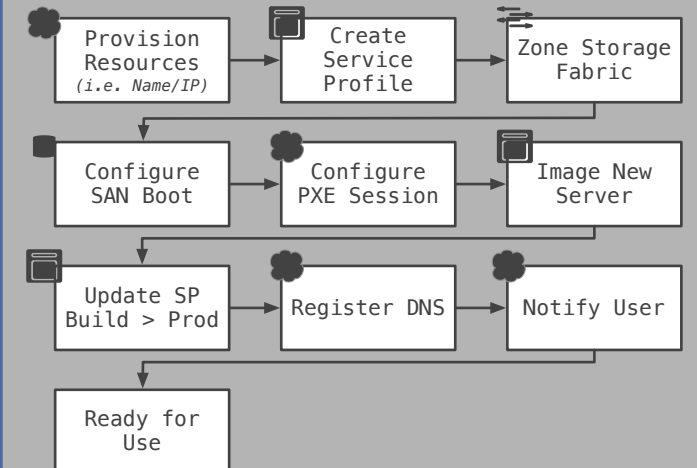
#### Automation Rough Cut

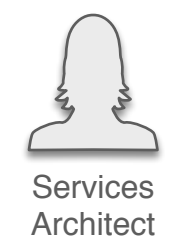
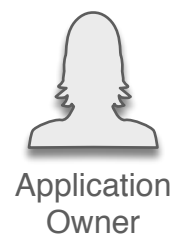
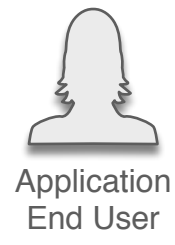


#### Automation Rough Cut



#### Automation Rough Cut





### Prime Service Catalog: End User Portal and Catalog

End User Portal	Service Ordering and Tracking	Service Management
Service Admin Portal	Service Catalog	

- CMDB
- Financial System
- Help Desk
- User Authentication
- User Database
- Email Notifications
- Cisco Cloud API's

### UCS Performance Manager

- Operations
- Infrastructure Monitoring and Capacity Planning

LDAP User Database

- MS AD

SMTP Server

### UCS Director: Private Cloud Infrastructure Automation

- Admin Portal
- Infrastructure Management and Operations
- Technical Automation and Orchestration
- Cisco Cloud API's
- User Authentication
- User Database
- Email Notifications

#### Site: Data Center

##### Pod: Cloud Pod

Virtual	vCenter
Compute	UCS, UCSC
Network	ACI, MDS
Storage	VNX

Groups: IT Infrastructure, Business Unit 1, Business Unit 2, Business Unit 3

User Portal

### ICF Director: Public Cloud Integration

- Admin Portal
- Public Provider Management
- Public Cloud Extension Configuration

#### Public Clouds

##### Provider 1

- IcfCloud 1: Group: Business Unit 1, Group: Business Unit 2
- IcfCloud 2: Group: Business Unit 3, Group: Business Unit 1

##### Provider 2

- IcfCloud 1: Group: Business Unit 2, Group: Business Unit 3
- IcfCloud 2

User Portal

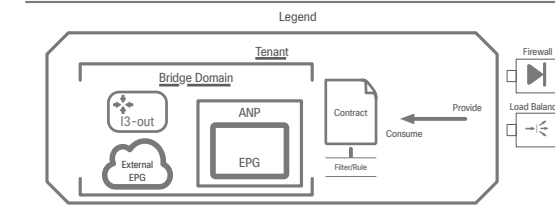
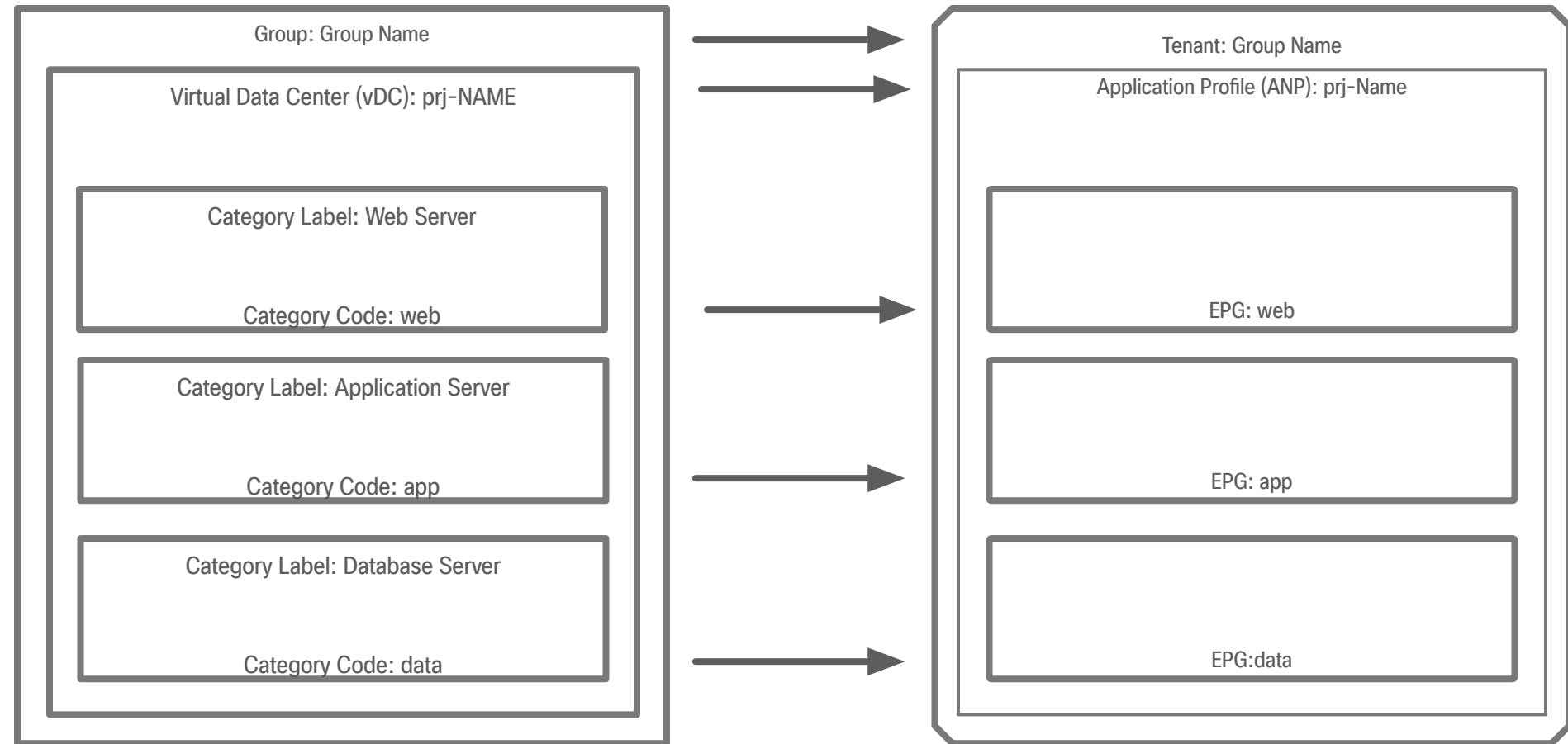
The EZ Cloud Use Cases and Reference leverages a basic association between UCS Director logical components and ACI Components. Understanding this association is important to recognize what will be done within the network fabric upon ordering a service from the Cloud.

### Key Points

Every Group in CECS will have a dedicated tenant in ACI. The name of the tenant will be built based on the group name. Though you could adjust the workflows in the sample workflows for use cases, the default is to take the Group Name from UCSD, strip off any domain information pulled in from an LDAP source (i.e. @domain.intra), and remove any white space from the group name.

There is a one to one relationship between a vDC in UCSD and an ANP in ACI. The defaults in the workflows is to have the names exactly match and it is recommended to leave it this way for simplicity.

EPGs in ACI are based on the vDC Categories in UCS Director. The EZ Cloud Release 1 Use Case Examples only use the Web Server, Application Server, and Database Server Categories, though in the future more Categories/EPGs will be available. The EPG name is based on the Category Code assigned to the Category. You should change the default codes from UCS Director for these three categories to be web, app, and data for simplicity and clarity. If you use some other code than these exact ones you will need to update elements of the EZ Cloud Release 1 Use Cases.



### Cloud Management

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

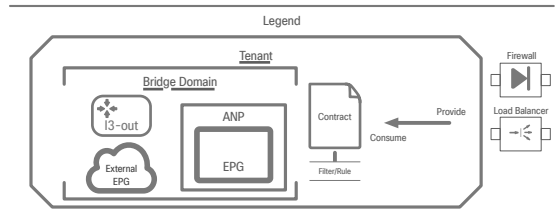
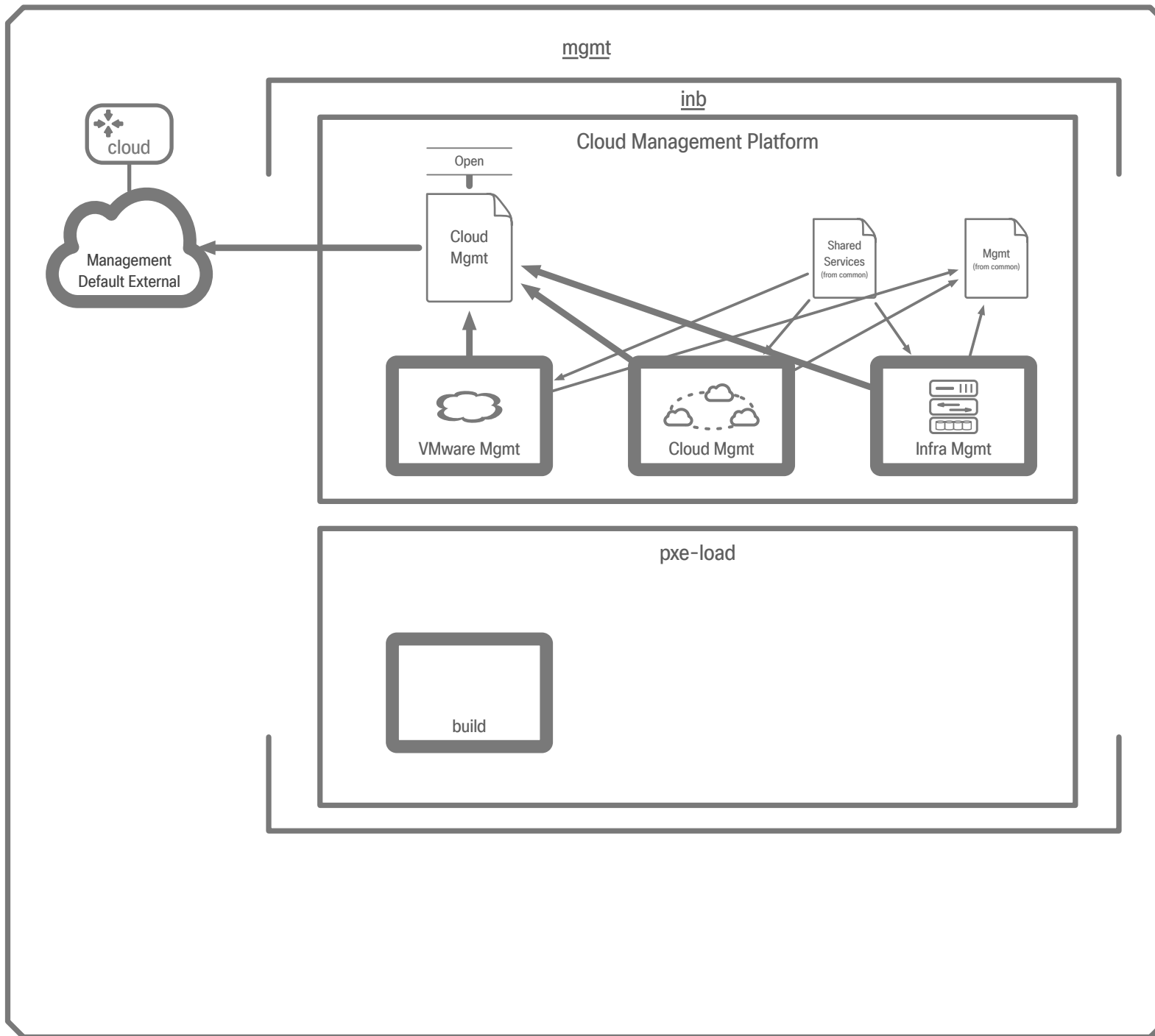
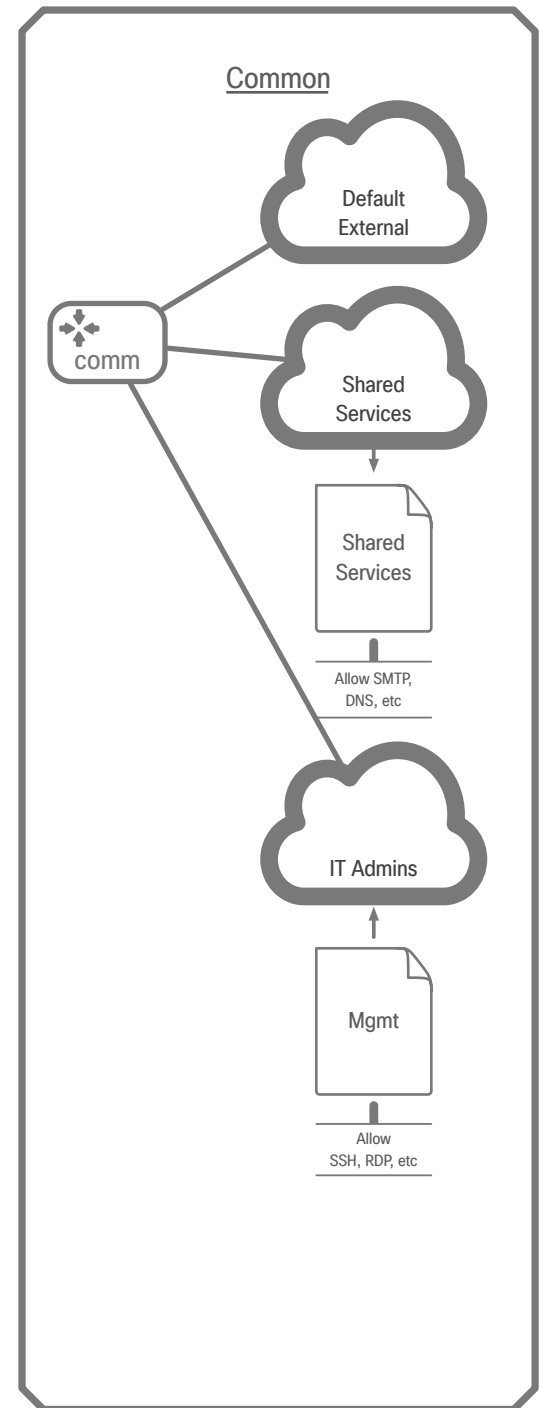
**Key Points**  
The Cloud Management Application Profile is built in the ACI standard mgmt tenant and leverages the standard inb Bridge Domain and Context/VRF. Build an L3 out for inbound and outbound traffic from all Cloud Management components.

The contracts and filters used for much of Type 1 are open, bidirectional contracts to ensure traffic flows as needed. Feel free to adjust filters as desired, but watch for unintended traffic problems.

In the common tenant in ACI, build the traffic elements and policy components that will be consumed by all End User Group resources that will be created through the use case workflows. These include:

1. A single shared Context/VRF and L3 out that will be used in all Group tenants for IP routing access. For simplicity, feel free to use static routing in and out of the fabric rather than a dynamic routing protocol.
2. External EPGs that represent a Default External (to the fabric), Shared Services, and IT Administrators.
3. Provide a Contract/Policy from Shared Services for common services needed across all Group Resources. This will be consumed by all Group resources provisioned.
4. Consume a Contract/Policy at the IT Admins Ext EPG for common management traffic like SSH, RDP, SNMP, etc. This will be provided by all Group resources provisioned.

*\*\* The reference assumes that the shared services like LDAP, DNS, SMTP, etc are provided external to the fabric. If these services are INTERNAL to the fabric, replace the External EPG with a standard fabric EPG providing the same Contract for services.*

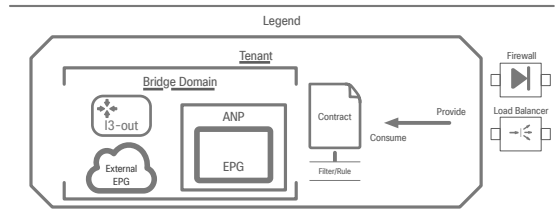
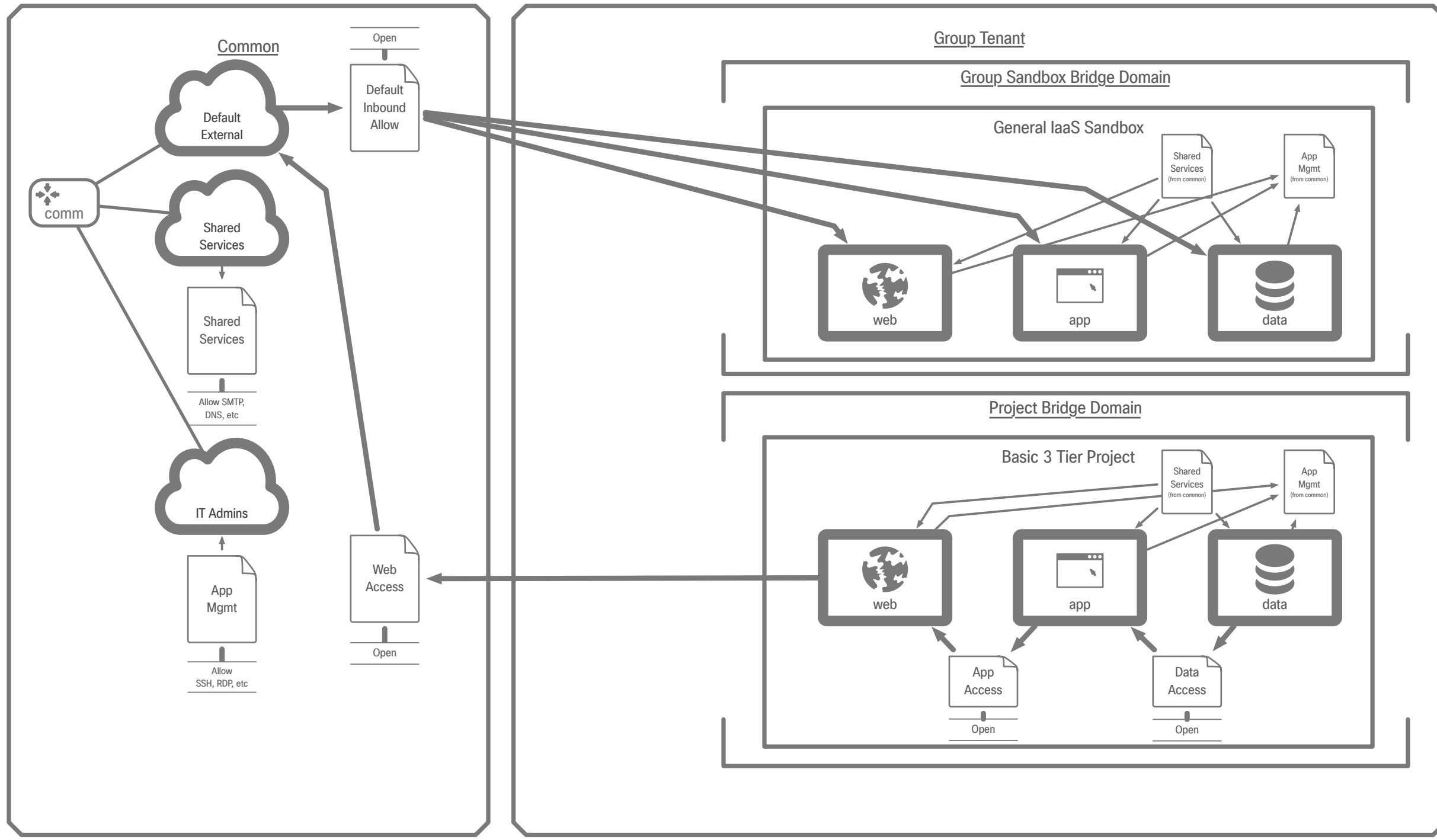


### Sample Group

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

**Key Points**  
 When a new Group is Onboarded with the Onboarding Use Case, a new tenant will be created for that group. At onboarding, that Group will be provisioned with a starting ANP for general cloud IaaS type services (noted here as "Sandbox"). This is a very open profile where each of the three tiers will consume a common contract that must be provided from the Default External EPG allowing inbound traffic from outside the fabric. The Sandbox ANP will be placed into a new bridge domain for this general IaaS service.

When the Use Case for ordering a New Basic 3 Tier Project is used, a new bridge domain and application profile will be created within the groups tenant. This application profile will build and leverage it's own contracts and filters to provide the common web/app/data style segmentation. The contract and filters for "Web Access" are created in the common tenant so they can be consumed by the Default External EPG (future releases of EZ Cloud will look to export the contracts into common).



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

**Key Points**  
 Though not required, it is convenient to leverage 1 or 2 rack mount servers to run the cloud management components, rather than on a blade within the UCS Chassis.

The Release 1 Use Cases were built with an EMC VNX providing the storage and MDS providing the SAN. If your environment uses other storage components, you will need to update any physical storage provisioning use cases.

