

## Multi-Datacenter Overview

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## Introduction

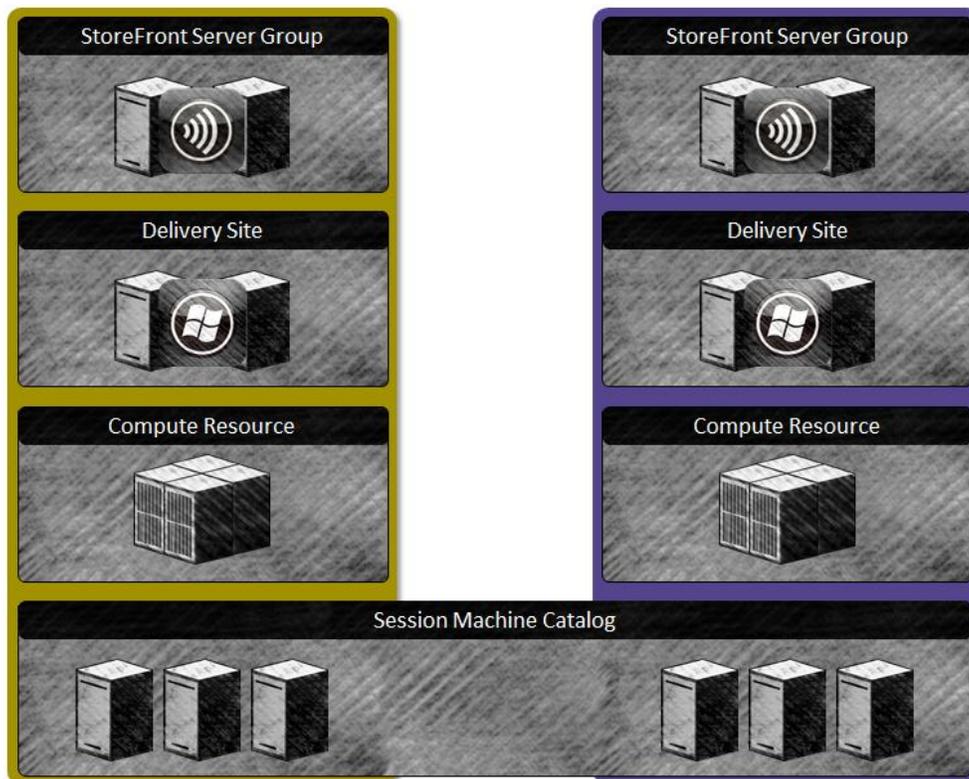
This document provides an introduction to datacenters within App Orchestration. It introduces the concepts associated with datacenters and provides a step-by-step guide to deploying a basic multi-datacenter environment.

## Key Concepts

### Datacenters

To support deployments across multiple geographic regions, App Orchestration introduces the concept of a datacenter. A datacenter corresponds to an on-site location in the following ways:

- StoreFront Server Groups, Delivery Sites (both XenApp and XenDesktop), Compute Resources, and License Servers are associated with a specific datacenter when added to App Orchestration. An organization might choose to share a License Server across multiple datacenters.
- Session Machine Catalogs are not associated with specific datacenters, but Session Machines within the Catalog are associated with datacenters. The administrator associates Session Machines with datacenters when adding the machines to App Orchestration.



**Figure 1: Basic Datacenter components**

## App Orchestration 2.0: Multi-Datacenter Overview

- Location User Groups allow a tenant's users to get applications and desktops from different datacenters based on the datacenter affinity of the user group. Location User Groups are explained in more detail below.

An Active Directory domain can span multiple datacenters and a datacenter can have multiple Active Directory domains and forests.

The first datacenter in App Orchestration is setup during the post-install configuration. To gain the failover benefits of multiple datacenters, you need to manually add more datacenters within App Orchestration.

When creating a datacenter in App Orchestration, you need to provide the following information:

- The name of the datacenter.
- An optional description of the datacenter.
- License Server address. The default value is taken from the App Orchestration global settings.
- Default NetScaler Gateway URL. The default value is generated using the DNS suffix specified in the App Orchestration global settings.

When a machine is added or imported into the App Orchestration system, the administrator associates it with a specific datacenter.

### Location User Groups

A Location User Group (LUG) is an Active Directory security group. In App Orchestration, these groups create connections between users and datacenters. This type of connection is called *datacenter affinity*. An LUG exists in Active Directory and falls under the scope of a single tenant. The following rules apply to the relationships between tenants and LUGs:

- An LUG must exist in Active Directory before it is added in App Orchestration.
- Each tenant always has at least one LUG.
- One or more LUGs are defined when the tenant is first imported.
- LUGs can be added to and removed from App Orchestration through the Edit Tenant wizard.

### Subscription groups

Subscription groups are Active Directory security user groups that are members of a parent LUG, and subdivide users according to the offerings they need. When you create a subscription, you specify which Active Directory groups can access that offering. You can specify the parent LUG if all of its users need access to the offering. In cases where only a subset of the users need access to the application or desktop, you can specify a subscription group.

### Offering capacity

The administrator can adjust the capacity of an offering when it is created, depending on the type of offering. By default, a capacity of 1 machine is set within users' Primary datacenters and the capacity in users' backup datacenters is left as 0.

Because it takes some time for capacity to become available after provisioning, and because the default capacity of 1 machine is often inadequate, it is recommended that the administrator should pre-allocate capacity for offerings. This can be done by editing the capacity of an offering before any subscriptions are created for the offering.

## LUGs and datacenter affinity

When a tenant is imported, the administrator must specify LUGs to set datacenter affinity for the Active Directory group and its members. The administrator must set at least a primary datacenter for the LUGs.

**Figure 1 Tenant Location User Group Example**

AD Group	Primary Datacenter	Backup Datacenter
domain\East Coast to West Coast LUG	East Coast DC	West Coast DC
domain\East Coast Only LUG	East Coast DC	None
domain\West Coast to East Coast LUG	West Coast DC	East Coast DC
domain\West Coast Only LUG	West Coast DC	None

## Using LUGs in subscriptions

When defining the directory group for a new subscription, the administrator can use either the LUG Active Directory group or a subscription group that is a member of a defined LUG. App Orchestration will then ensure that the appropriate resources are deployed in the correct datacenter according to the LUG datacenter affinity.

## Configuring a basic multi-datacenter environment

This procedure outlines a basic multi-datacenter deployment.

Step	Action
1	<p><b>Configure the first datacenter</b></p> <ul style="list-style-type: none"> <li>a) Complete the App Orchestration installation and initial server configuration.</li> <li>b) Logon to the web console for the first time and configure the global settings when prompted.</li> <li>c) Enter a name for the first datacenter (for example, “West Coast”).</li> <li>d) Enter the License Server address.</li> <li>e) Enable or disable network isolation.</li> <li>f) Enable or disable NetScaler Gateway. If enabled, enter the NetScaler Gateway address.</li> </ul>
2	<p><b>Configure further datacenters</b></p> <ul style="list-style-type: none"> <li>a) Open the <b>Define &gt; Datacenter</b> page and add a new datacenter.</li> <li>b) Enter a name for the datacenter (for example, “East Coast”).</li> <li>c) Enter the appropriate information for License Server and NetScaler Gateway.</li> </ul> 
3	<p><b>Create a Session Machine catalog and populate datacenters with machines</b></p> <ul style="list-style-type: none"> <li>a) Open the <b>Design &gt; Session Machines</b> page.</li> <li>b) Create a Session Machine Catalog.</li> <li>c) Add the Session Machines to the catalog in both datacenters. These machines must be</li> </ul>

	identically configured.										
4	<p><b>Create your Delivery Sites</b></p> <ul style="list-style-type: none"> <li>a) Open the <b>Design &gt; Delivery Sites</b> page.</li> <li>b) Deploy Delivery Sites in both datacenters.</li> </ul>										
5	<p><b>Create StoreFront Server Groups</b></p> <ul style="list-style-type: none"> <li>a) Open the <b>Design &gt; StoreFront Server Group</b> page.</li> <li>a) Deploy StoreFront Server Groups in both datacenters</li> </ul>										
6	<p><b>Create an Offering</b></p> <ul style="list-style-type: none"> <li>a) Open the <b>Design &gt; Offerings</b> page.</li> <li>b) Based on the tenant’s requirements, create an appropriate application or desktop offering.</li> <li>c) Select the desired isolation mode for this offering.</li> <li>d) Enter a name for the offering.</li> </ul>										
7	<p><b>Create LUGs in Active Directory</b></p> <ul style="list-style-type: none"> <li>a) In Active Directory, create the LUGs required for the tenant. For example: <table border="1"> <thead> <tr> <th>Name ▲</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td> East Coast Only LUG</td> <td>Security Group...</td> </tr> <tr> <td> East Coast to West Coast LUG</td> <td>Security Group...</td> </tr> <tr> <td> West Coast Only LUG</td> <td>Security Group...</td> </tr> <tr> <td> West Coast to East Coast LUG</td> <td>Security Group...</td> </tr> </tbody> </table> </li> <li>b) Add subscription groups as members to the East Cost LUG. For example: <ul style="list-style-type: none"> <li>“East Coast – HR” group in the “East Coast Only LUG”</li> <li>“East Coast – Sales” group in the “East Coast to West Coast LUG”</li> </ul> </li> <li>c) Add subscription groups as members to the West Cost LUG. For example: <ul style="list-style-type: none"> <li>“West Coast – Operations” group in the “West Coast Only LUG”</li> <li>“West Coast – Sales” group in the “West Coast to East Coast LUG”</li> </ul> </li> </ul>	Name ▲	Type	 East Coast Only LUG	Security Group...	 East Coast to West Coast LUG	Security Group...	 West Coast Only LUG	Security Group...	 West Coast to East Coast LUG	Security Group...
Name ▲	Type										
 East Coast Only LUG	Security Group...										
 East Coast to West Coast LUG	Security Group...										
 West Coast Only LUG	Security Group...										
 West Coast to East Coast LUG	Security Group...										

8 **Import a tenant**

- Open the **Deliver > Tenants** page.
- Import a new tenant.
- Create a name for the tenant.
- Specify the LUGs defined in Step 7.

**Import New Tenant**

**Add Location Groups**

Location group:

Primary datacenter:

Backup datacenter:

Location Group	Primary Datacenter	Backup Datacenter	
East Coast Only LUG	East Coast		<a href="#">Delete</a>
East Coast to West Coast LUG	East Coast	West Coast	<a href="#">Delete</a>
West Coast Only LUG	West Coast		<a href="#">Delete</a>
West Coast to East Coast LUG	West Coast	East Coast	<a href="#">Delete</a>

- Complete the tenant creation.

9 **Subscribe tenant to an offering**

- In the tenant window, create a subscription.
- Select the previously created offering.
- When specifying directory groups, use either the LUG or a member subscription group.

10 **App Orchestration executes workflows to allocate resources to the primary datacenter**

App Orchestration automatically launches workflows to orchestrate the allocation of resources to the primary datacenter.

Note: At this point, no additional resources are allocated in the backup site. You need to increase the capacity of the backup site.

11	<p><b>Edit the capacity of the offering</b></p> <ul style="list-style-type: none"><li>a) Open the offering and edit the capacity.</li><li>b) Depending on the isolation type of the offering, you may need to select the tenant and the LUG or subscription group.</li><li>c) Increase the backup capacity as necessary.</li></ul>
12	<p><b>App Orchestration executes workflows to allocate resources to the backup datacenter</b></p> <p>App Orchestration automated workflows allocate resources to the backup datacenter.</p>