

Bonsai Framework Infrastructure on the Cloud

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Overview

This article is in progress and covers our first attempt at putting the Bonsai Framework infrastructure on the cloud. We have the following final targets,

1. Confluence with Supporting CI/CD Systems and Integration
2. Tomcat in Docker inside of LXD
3. Tomcat in Cloud Foundry inside of LXD

We have covered first set of steps on [Path to Cloud](#) (document later) up to CI/CD.

Using the in progress [parts of the cloud](#) article we have settled on the following,

Component	Selection	Notes	Top 3 Reasons
...	Puppet		
Virtualization Cloud Provider	Azure	Will also try Amazon later for proper comparison.	Clearer documentation to start.
Source Control for Code	Bitbucket selecting GitHub	DevOps Repository created with Frank as the main manager and Roderick as the Administrator.	
Distributed Operating System for Containers	None		Confluence is not yet.
Operating Virtualization	LXD		Cost Savings, Transportable, Isolation.

Virtualization Cloud Provider

Here details necessary to size with [Azure Canadian Calculator](#).

Software Requirements

Ongoing systems that will always be up,

Software	Average Memory for our Use Case	# of Users	Space	CPU
Apache Web Server	200MB		1.44GB	
Confluence	1.6GB(to be tuned)		10.79GB	
PostgreSQL	543.79MB		455.74MB	
Puppet Server				
Artifactory				

Calculations

This was what I got as best bang for the buck given we can use LXD,

- West US 2 is ~\$20.00/month cheaper than other regions for what we need,
- A1
- Basic
- 1 Core
- 1.75 GB RAM
- 40 GB Disk
- \$21.71/month or \$0.29/hour

Option A

Free Options

There are various [free tiers on Azure](#) of which we want to use,

Service Item	Sizing	Limits	Purpose
Virtual Network		50 free virtual network.	Create private networks with full control over IP addresses, DNS servers, security rules, and traffic flows. Virtual network to on-premises using a VPN tunnel, or connect using ExpressRoute service.
Azure Active Directory		500,000 directory objects and single sign-n for up to 10 apps per user.	Nice to have - can we make Confluence hook up with Google SSO?
App Service	F1 Instance		Lab, try Tomcat and Docker.
Scheduler		3,600 job executions per month.	To run automated backups.
Automation		500 minutes per month of job run time.	IT automation.
Azure Monitor		Free while in public preview	
Traffic Manager			DNS routing failover and basic traffic health check

Monitoring Container Growth

Peak

Date	sql	app	web
Feb 08, 2017	543.79MB	1.6GB	200MB
Feb 28, 2017	501.11MB	1.72GB	301.45MB
Mar 08, 2017	493.27MB	1.76GB	311.74MB
...			

Server Notes

All changes are now recorded into our [server notes](#).