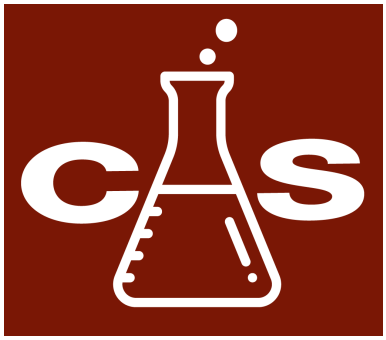


CS labs Infrastructure Details

Group Leader - Zac Clifton,

Group Member - Zach Bouvier, Group Member - Mamadou Thiello

October 29, 2019

Abstract

The CS Infrastructure team covers every aspect of operations for this project. We cover the setup, maintenance, and upgrades of all the servers, services, and communication in the domain.

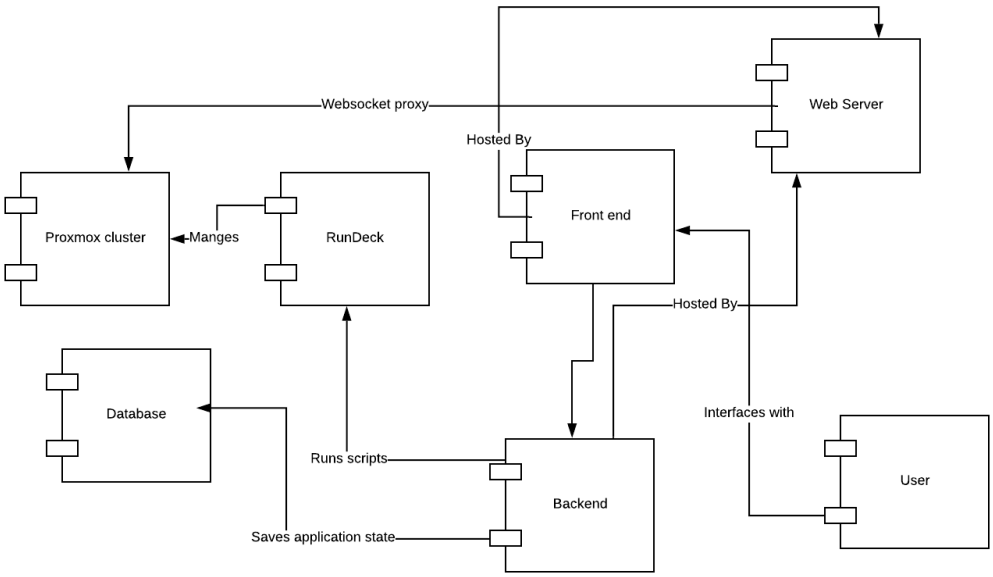
Contents

SUM of Total	User				
Time Sheet		Mamadou	Zac	Zach	Grand Total
	0:00:00				0:00:00
09/01/2019			3:45:00		3:45:00
09/08/2019			17:15:00	13:15:00	30:30:00
09/15/2019		6:00:00	17:52:00	12:00:00	35:52:00
09/22/2019		2:00:00	13:45:00	7:45:00	23:30:00
09/29/2019			13:00:00		13:00:00
10/06/2019			3:15:00		3:15:00
10/13/2019		3:15:00	26:00:00		29:15:00
10/20/2019		1:30:00	0:45:00		2:15:00
Grand Total	**0:00:00**	**12:45:00**	**95:37:00**	**33:00:00**	**141:22:00**

SUM of Total	User				
Task Name (Please use the name of the trello card)		Mamadou	Zac	Zach	Grand Total
	0:00:00				0:00:00
Create excel time sheet			0:12:00		0:12:00
On call with APC Support			0:25:00		0:25:00
Metting with elastic			0:30:00		0:30:00
Diagnosis UPS critical outage alert			0:35:00		0:35:00
Set up DokuWiki			0:45:00		0:45:00
Team meeting		0:45:00			0:45:00
Tried to finish Vlan			0:45:00		0:45:00
Diagnosis unresponsive prox4			1:00:00		1:00:00
Setting up AWS			1:00:00		1:00:00
Meeting with volunterr			1:15:00		1:15:00
Pick up servers from LGE			1:15:00		1:15:00
Clean 119 for server move			1:30:00		1:30:00
Diagnosis rasp pi network issue			1:30:00		1:30:00
Work on installing PAM module		1:30:00			1:30:00
diagnosis supermicro rouge website			2:00:00		2:00:00
Environment set up and testing		2:00:00			2:00:00
Setup elkstack			2:00:00		2:00:00
troubleshoot vpn			2:00:00		2:00:00
Work on Documentation		2:00:00			2:00:00
Attempt to set a up static ips on UPS			2:15:00		2:15:00
Setting up authentication		2:30:00			2:30:00
Meeting with the team			3:00:00		3:00:00
set up elkstack			3:00:00		3:00:00
Redo Rack for new UPS			3:45:00		3:45:00
Create GUI windows		4:00:00			4:00:00
Get Quarum on internal proxmox cluster & set up PXE server			4:15:00		4:15:00
Set up Application cluster			5:00:00		5:00:00
Create vpn			6:30:00		6:30:00
Migrate Internal VMs to new servers			8:00:00		8:00:00
Register UPS' with APC			8:45:00		8:45:00
Saturday Workshop			10:00:00		10:00:00
Event Monitoring				10:00:00	10:00:00
Set Up Wifi, Finish vlans, Diagnosis network slowdowns			10:55:00		10:55:00
Decommition old servers			13:30:00		13:30:00
Temperature Probe				23:00:00	23:00:00
Grand Total	**0:00:00**	**12:45:00**	**95:37:00**	**33:00:00**	**141:22:00**

1 Contribution Breakdown

Zac Clifton – Project leader, contributes by creating reports, deciding infrastructure architecture and project decisions.
Zach Bouvier – IT Operations, contributes by implementing infrastructure automation and monitoring.
Mamadou Thiello – IT Operations, contributes by implementing infrastructure automation and integration.



2 Network Details

2.1 Overview

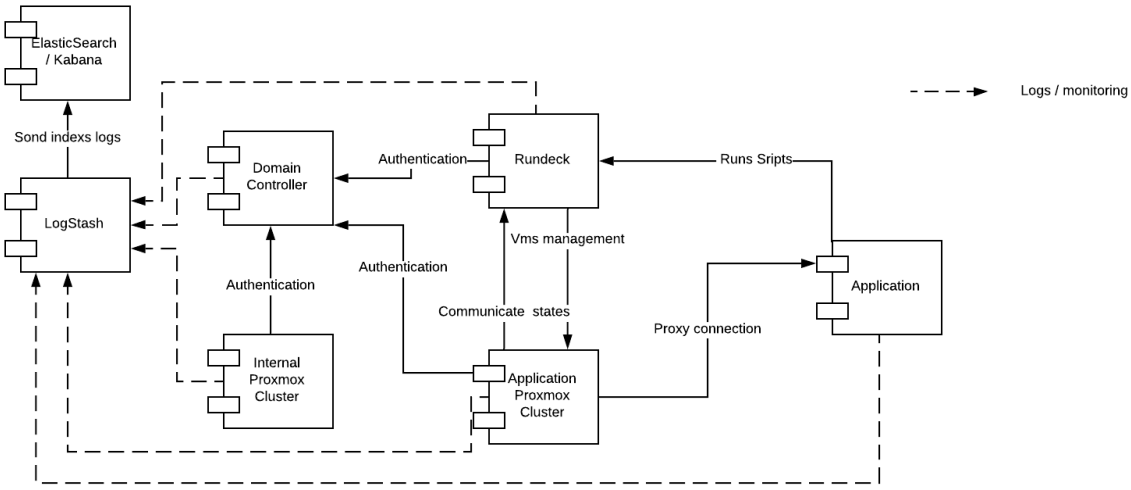
The system is divided in the following parts; Application, Domain Controller, Rundeck, Application cluster, Internal Cluster, Database, and monitoring system (ELK Stack). The application will hold the backend to the website that forwards VM's. This is the centerpiece of the operation, everything else supports this. Every system we have decided to use is open source and supported in the long term.

2.2 Network Design

As shown in figure 1 the infrastructure has a continual flow from the front end to the backend. As the user, signs in through IPA, the process begins on setting up the vms and the tunnel for the user to use this project.

2.3 Interface Design

The interfaces that humans will be interacting with are as follows:



1. CS Labs Frontend - This will be the frontend to the application. The user will be able to see the offered Modules, there Modules, and be able to work in labs.

2. IPA Server- The web page to the IPA server allows us to manage the domain and access for all computers in the network.

3. Rundeck - This will be our centralized means of automation and scheduler for the whole operation.

4. Proxmox - This is the interface for the vm and the hypervisor manager.

5. DokuWiki - This holds all of our documentation.

6. Palo Alto - This interface allows us to easily create and implement rules on the spot.

2.4 Procedural Design of the Network

In the short term, the design we are working on implementing is described in figure 2.