CS Labs - Feasibility Report

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Product

CS Labs will serve as an online training ground for students and other users.This system must be able to spin up networked vms using a lab template. This will allow multiple users to train without the need for a local virtual machines. Users can get into the action quickly because the labs are spun up and ready to go.

Technical Feasibility

This product can perform by using proxmox hypervisor underneath the scenes with virtual machine templates.Proxmox is an operating system where its sole purpose is to run virtual machines. The application will run premade scripts to spin up virtual machines needed for a lab. Proxmox also provides ways to network virtual machines together allowing for multi virtual machine labs. In order to integrate with the CSG infrastructure, RunDeck will be used to execute the scripts needed to spin up a lab. The backend will be using .Net Core to handle the user's data and lab progress. The front end will be handled via React to provide a smooth user experience.

Social Feasibility

This application will provide a cheaper and a more effective way to get hands on learning. IUS students would receive training provided by classes allowing them to learn more in one semester. This allows students and users who may not have the computing power to run a virtual machine on their own machines, to perform hands on training. There would be no retraining of the workforce as we are just enhancing the current training. There aren't any jobs that we would be replacing since there is an alternative product that is way more costly that is being used. We won't need to co-operate with any current workers since we aren't replacing anyone's jobs.

Economic Feasibility

The product requires a server that can run tens of virtual machines for a good user experience. Server costs can range from a thousand dollars and higher depending on how many concurrent users we want to support. To initially build the system, the development could cost around $24,960 if each developer was paid $39 an hour. The development hours are estimated to be 640 hours. At first this system is intended for IUS students and the running costs are extremely slow due to IUS providing electricity, and internet access. The current servers have been gifted to us by companies. This brings our operating costs to $10 /yr for the domain. Later down the road we would like to support public users and other schools. A new company could adopt this product as a service for $5 a user per month for a class of 30 students that can bring $150 a month. Individual users can pay per lab training called modules. Some modules will be free providing a

great asset to new users. We are willing to work with IUS to provide an IU branded product to to boost product visibility. Overall there is not much investment for this and a lot of flexibility to return a profit.

Market Research

There are other software out there like our product, but they are very expensive and tend to hide their prices with a high barrier of entry. This will be more attractive to standard users and schools without a large budget. The competitors have a large user base and we think we can attract that user base to our product with reasonable pricing. There are many products available for this which means there is a large potential user base. (G2 - Virtual IT Labs)

Alternative Solution

There are several alternative software available like Cloud Share - Virtual Training Lab, McLabs - Cloud Based Training Lab, Net Dev Group - Net Lab+ and CBT Nuggets. This system will be more marketed towards the end users instead of large customers. We will provide tenant level pricing for schools and companies but our primary target will be students and individuals wanting to learn. The alternative software provides contract level pricing with high barrier of entry. Our system will provide features to smaller needs and larger ones allowing online training to be more accessible.

Project Risks

The servers we were gifted are our main source of providing this service. If they go down we will need to either receive more donations or have built up a user base to buy replacement servers. Since our servers are hosted at IUS, the chance of failure goes up because our access to the internet is controlled by IUS and they can potentially bring our systems down by accident. This will hurt our uptime and getting IUS to fix the issue can be timely and costly to our user base. Another risk is the development time could be miscalculated and the project could cost more to create (if this was not a school project) possibly causing us to lose money.

Works Cited

"NETLAB : Where Practice Leads to Success." NETLAB | NDG, https://www.netdevgroup.com/products.

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"Cloud-Based Learning Lab." Virtual Training Lab | Cloud Based Training Solutions, https://www.mclabs.com/services/cloud-based-training-lab/.

"Virtual Labs." CloudShare, https://www.cloudshare.com/product/technology/virtual-labs.

"Best Virtual IT Labs Software." G2, www.g2.com/categories/virtual-it-labs.