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6.23.21

CS 470 Final Reflection

[https://youtu.be/v\\_aCPMCSPLe](https://youtu.be/v_aCPMCSPLe)

The curriculum laid out in the Full Stack Development II course at Southern New Hampshire University helped me grow as a software developer in various ways. Certainly, the skills I learned across containerization tools, such as Docker, and converting applications to serverless architecture paradigms via Amazon Web Services (AWS) are important. But I also got the chance to hone my strengths as a software developer in terms of offering assistance to my fellow students and improve my time management skills. That said, the roles I'm prepared to land follow closely to the skills of a frontend or full stack software engineer, as well as a cloud software engineer.

With AWS, microservices and serverless tools offer strategies for handling efficiency across an application's stack. For example, using Lambdas and Step Functions have the ability to handle errors gracefully. And scale concerns can be addressed by leveraging AWS Auto Scaling, which allows automatic capacity adjustments based on utilization of EC2 and DynamoDB instances.

AWS also provides a convenient tool for calculating cost. This tool is called the AWS Pricing Calculator and allows cost estimations based on specific use cases. With a serverless architecture, using the pricing calculator enables a certain level of predictability in terms of cost. Yet, auto scaling may mean cost can increase dramatically as it is pegged to utilization. Therefore, serverless systems generally afford more advance notice of cost versus containerization, but it ultimately depends on use case.

There are lots of pros and cons that are deciding factors in application expansion plans. Feasibility studies should be conducted to understand market share dynamics and cost-to-benefit analysis for different tactics for business expansion. The biggest con toward expansion may come down to capital expenditure. Also, time to build out infrastructure, hire and train new staff, and the logistics of office space or network management can be considerable negatives to overcome. However, the pros of expansion can lead to higher revenue and an organization better positioned for future success. With serverless systems, elasticity plays a role in expansion through "right size" resource utilization by ramping up or down the necessary resources an application needs to meet demand. Additionally, this complements the pay-for-service model where you only pay for the services you use. This means you only use the resources you actually need at any given moment and only pay for exactly what you use, no more, no less. These techniques give a business a posture that is well suited for future growth.