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<div align="center">DevOps Engineer</div>

DevOps is a field that has been growing and being implemented in most companies and

for good reason. It combines the development team and the operations team of a company. Both

teams work together to ship out their products quickly by implementing tools to help increase

productivity. Traditionally, products are shipped out using a method called the Waterfall

Method. The Waterfall Method consists of six stages, Requirements, Analysis, Design, Coding,

Testing, and lastly Operations. In practice, the Waterfall Method is an effective method of

shipping out product. However, in practice this method can incur a large cost to ship out products

due to discovering bugs much later since the testing phase comes much later in the process. The

reason why DevOps is able to increase deployment speeds for products is because it allows

easier collaboration between Operation and Development teams which leads to continuous

integration. According to Christoper Null from Tech Beacon (n.d), Amazon and Netflix are two

large companies that have benefited from utilizing DevOps practices by being able to catch

potential bugs before being deployed to production and impacting customers. Continuous

integration is helpful because you constantly merge smaller pieces of code to already existing

code. Therefore if it breaks its easier to solve because it's less code to look through. DevOps is

still a growing field and even using the title "DevOps" is ambiguous. However at a larger

picture, DevOps is allows companies to have better collaboration and communication which

results in a much higher customer satisfaction. According to Christopher Null, some of the main

companies that use devops well are Amazon, Target, Netflix, Sony, and Adobe (Tech Beacon, n.d).

A typical day for a DevOps Engineer varies between companies based on their needs. A good example is a devop could start off their day fixing issues of the newly merged code from last deployment or they could be maintaining the servers for the other half of the day. Another day they could be creating new scripts helping other engineers build their environment, or diagnosing their coding environment. There are a lot of areas where a devop can jump in and help. It all depends on the goal/need for that day. Ops can even request a new tool to be built or ask for a bug to be fixed on an old tool. Then engineering has to figure out a way to build it/fix it so that they aren't causing blockers for ops. According to Subodh Jain (LinkedIn, 2016), a typical day for them consists of interacting with other teams, reading and writing documentation, and exploring new tools and always learning and staying up to date with new tech trends. Similar to how a typical day of a DevOps Engineer can vary, the way a company decides to implement a DevOps culture can differ as well. For example, the way Netflix goes about an effective DevOps Culture is by giving their engineers the freedom and knowledge that they need to work as stated on a podcast conducted by Swapnil Bhartiya on the director of engineering at Netflix Dianne Marsh (TheNewStack, 2018). This culture that Netflix has been able to create is the heart of what a DevOps culture thrives in because it allows engineers to really own their code. By providing the necessary tools, they are able to test as they build to reduce the amount of bugs and have more confidence when they are deploying to production. By giving their engineers these new responsibilities, they were able to create a model called a Full Cycle Developer, someone who

designs, develops, tests, deploys, operates and supports, as described in Netflix's Tech Blog (Netflix, 2018).

One of the main companies that really uses Devops is Netflix. Netflix was started in Scotts Valley, California in 1997 by two co founders Marc Randolph and Reed Hastings. The two had previously started another company called Pure software. Marc Randolph, an investor, advisor, and entrepreneur, founded/co-founded many other startups before and after Netflix. Randolph now the head of a company caller Looker and goes around the world public speaking. Reed Hastings studied Mathematics at Bowdoin College in Brunswick Main in 1983 and received his Masters in Computer Science at Stanford in 1988. According to Joan Hibler (Britannica, n.d), before starting Netflix in 1997, he founded and sold a company currently named Pure Atria Corporation. According to an interview conducted on Netflix's CEO Reed Hastings conducted by Michelle Castillo (CNBC, 2017), Netflix started out by shipping DVDs to customers in 1997 before going public in 2002. Netflix has 5 branches of the company throughout the US and 13 throughout the world. They also employ around 7,000+ employees and provide a streaming service for users to watch and enjoy their favorite TV shows and movies. The idea started when Hastings forgot to return a rented movie and had to pay a late fee. At the moment their top selling point is movies. Lots of movies and TV shows get a percentage of money so that netflix can stream it. These products are able to give Netflix good revenue due to the fact that you can pay a monthly subscription to watch all your favorite movies and tv shows at any time without any ads. The convenience of that is what makes Netflix so successful.

As a company, Netflix doesn't seem to keep secrets from their employees,they respect and treat them well. Netflix has a very diverse and open environment for their employees and as

Daniel Friedman states(Reputation Institute, n.d), "To many of us, this shouldn't be much of a surprise – after all, Netflix's diverse and critically acclaimed programming forms the bedrock for many of our weekend plans." (Reputation Institute, n.d) Reviews from Glassdoor also highlights the freedom and trust they have in their employees. Of course as all companies they have their flaws and cons that could use some work, but for the most part, employees working there seem to enjoy and respect the company for what it is.

To date, Netflix can be well known for their cloud infrastructure and successful use of DevOps practices, however they weren't like this in the beginning and much like many startups, had their downfalls. Currently, the CEO of Netflix is Reed Hastings and when Netflix started, they used the Waterfall Method where Software Engineers focused on the development cycle and Operation teams focused on the operations cycle of the site. According to Netflix Tech Blog on their team's journey (Netflix, 2018), when things went well having a separate operations team meant that their developers were interrupted less and could focus on building new things, however when things didn't go well that meant a loss of revenue due to spending more time on bugs rather than building new features caused by the inconsistent communication between the Development team and the Operations teams. When their streaming services were introduced in 2007, they were still having these issues from the Waterfall Method and weren't able to produce new features efficiently as they do to date.

Landing a job as a DevOps Engineer can require years of experience. This is due to the fact of needing development experience as an engineer and there is a need for real world experience. That real world experience requires working in operations as a System Administrator or in IT to understand server architecture. This can require up to 5 years of experience in at least

one concentration. With that in mind, there needs to be a desire to learn other concentrations and get out of your comfort zone. In order to prepare for this profession, learning and understanding servers and architecture of a website can greatly help or trying to get proficient at programming can also greatly benefit your chances. You can get experience for these skills from a university, trade school, or self teaching. After being comfortable with one concentration, the next goal is to be able to land a junior position, internship, or apprenticeship. The route you choose to take will help you get production experience, guidance, and more exposure for that specific line of work. With the experience you get from landing any types of these roles, you're able to get a better understanding of what either a software engineer or a system administrator does. After that you could talk to your manager about transitioning to a new team that closely interacts with DevOps engineers or find DevOps engineers at your company that can help you get where you want to be. Another option is to apply directly to DevOps positions and express your interest in becoming a DevOps engineer. However, if none of those are an option, other things you can try is building your Github Portfolio on projects you want to create. Being able to have your own projects to show off can be a great learning experience. For example, building your own server for a website or coding your own idea of a project will allow to learn material that is beneficial into becoming a DevOps Engineer.

My plan of action is to complete my studies at Cal State Monterrey Bay and obtain my Bachelors degree in Computer Science. Though not having a degree is a deal breaker for most companies to land a DevOps job, it definitely is helpful to obtain stronger fundamentals and be able to network with your fellow colleagues. Some classes I'm taking to help me achieve my goal of becoming a DevOps Engineer, are an Architecture and Assembly class that is teaching

me low level architecture of a computer, an Ethical Hacking class that is teaching me about scripting and building Virtual Machines, and a DevOps and QA class that is teaching me more about Unit Testing and Continuous Integration with my own projects. As I continue to gain more knowledge and grow in my career, I plan on transitioning from being a Full Stack Developer to either transitioning to becoming a System Administrator or going straight to becoming a DevOps Engineer. I also plan on attending more DevOps conferences and meeting more people in that field so I'm able to pick their brains about how I can get there. However, the most important thing is to always want to grow and learn more because technology is always growing and there will always be something new to learn.

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