1. This is a java based application and developers simply check in the code into GIT repository
2. As a dev-ops engineer one of my core responsibilities is to set up the CI/CD pipelines for which we are using jenkins
3. So my responsibility is to design groovy script jenkins files for triggering all stages of CI/CD
4. We receive notification directly via Web hook which we I have configured whenever jenkins receives notification jenkins actually downloads the code build the code with the help of maven where the artifacts gets created
5. I have configured jenkins to deploy these artifacts into testing servers we have team of testers who create automation testing programs using tools like selenium
6. I have configured my jenkins to download these selenium programs and execute them so that it can perform testing and if the testing is successful the next stage jenkins would deploy into the pre-prod environment
7. Where it actually takes approvals from the concerned team and there it again execute some UAT created by the testers
8. This is the common flow of CI/CD which we have implement
9. And our sprint duration is somewhere between 2-4 weeks and it’s my responsibility to design these groovy script jenkins files to every releases that is happening during the sprint activities
10. Apart from these though our sprint duration is approximately 4 weeks we also have sub sprints which are as small as 2 days or 3 days or something like that and this sub sprints would be related to buy fixing and enhancements
11. And during this sub sprints also minor releases happens so its my responsibility to create corresponding jenkins files and see that necessary flow of CI/CD as to happen
12. Apart from this we also have lot of other scenarios we run parallel multiple jenkins jobs and to ensure that the performance of jenkins master does not go down what we have done is we have created multiple slave machines and we have distributed workload to this slave machines
13. The branching strategy that our developers are actually using is for every function they are creating a separate feature branch we also have a main branch which is called release branch
14. Individual functionalities code developers put on feature branch and once the code is fully created they merge into the release branch
15. We also have something called as hot fix branch where all the bug fixing and all those things are done
16. Because we have multiple branches for each and every function I have actually designed a multiple branch pipeline
17. Wherein we have created multiple jenkins files and to ensure that the same code is reused in these jenkins files multiple times
18. I have configured shared libraries where I have created customized reusable function which are called in my pipeline programs and CI/CD flow is performed
19. Apart from this we also use docker to a huge extend in our organization as i told you earlier this is a java bases application where our databases are running on oracle and applications servers are running on tomcat
20. Now this entire dev environment I have setup in a form of docker container for which I have created docker compose files similarly i was responsible for converting legacy applications into docker based applications and one of my core responsibility over here is to design docker files to these
21. So I create docker files so that I can understand the existing architecture and based on that I design docker files create customized images and these images i am uploading into a docker private registry a ECR registry which we have configured
22. Similarly very recently we had an requirement from our testing team where the selenium testing team wanted to perform cross browsers cross platform testing and they have estimated 800+ browsers OS combinations on which they want to run selenium programs
23. Now you can image creating an infrastructure with 800+ browsers OS combinations is not a small thing right so this entire environment initially our organization was depending on a cloud service provider called sauce labs though it was very effective but also expensive
24. So at this point of time I and my team did a little bit of POC(Proof of concept) which is nothing but initially validation process that is done
25. We have checked weather this entire environment can be dockerized or not and out of 800+ browser OS combination that our selenium team was expecting we are able to dockerized 600+ in a form of containers
26. Almost you can say 75% of the infrastructure which was earlier running on the sauce labs now running as docker container on a single server
27. This was initially a huge task because we have create our own customize images with different different browsers installed on it
28. It took lot of time but it was really rewarding because 75% of infrastructure which was earlier running on sauce labs now running on our servers and this was huge cost cutting for our organization and in fact I received appreciations from our client for this
29. Similarly I was responsible for implementing docker at the level of production using docker compose and docker swarm initially our organization was using docker swarm but later they have decided to migrate into k8s
30. So I have working knowledge of both docker swarm and k8s and migrations from docker swarm to k8s is something that I have personally done
31. I also have experience in creating various necessary definition files in k8s for deploying the component of k8s for handling challenges like load balancing or auto scaling or performing rolling update operations
32. Promising high availability to the customer and all these things on production environment so that the customers does not experience any down time how to handle all this activities in the background is something that I have worked on extensively
33. Similarly I have also used HELM to simply the process of deploying the components into the k8s cluster and recent application which we have deployed into k8s cluster was an python based application
34. We had a payment module which is created using python this was something which was actually exposed to the customers
35. Whatever activities they are doing over here would be reflected to a database which is created using REDIS form there we have a .NET application which is used to filer the data and store it permanently into a POSTGRES database
36. From POSTGRES database our internal team would view the results on an application which we created using NODEJS , so this entire environment we had 2 databases a python application .NET application and NODEJS application
37. So I was asked to deploy these entire stuff into a k8s cluster which I have actually did I have created necessary service definitions files the stateful set objects for databases the deployment objects python and NODEJS application so designing all this files to deploy it into a k8s cluster was one recent activity which I was asked to do and I have successfully deployed it
38. Our applications are actually working on a data centre located in Virginia close to 2000+ servers and configuring software remotely was one of my core responsibility for that we are using ansible
39. So I designed ansible playbooks and roles to configure various software applications like you tomcat mysql apache or even running docker containers we do remotely from the level of ansible playbook so I have extensive experience in creating ansible playbooks
40. Similarly we have identified certain used cases in docker and jenkins where we have saw that via python scripts we would actually automate that activity so we are currently working on that we are creating python scripts so instead of manually triggering those activities from the level of python programs we are in process of automating it
41. So some basic extend I also have experience in terraform to setup the infrastructure the k8s cluster which we are managing is an unmanaged k8s cluster running on AWS these are free ec2 instances and my responsibility here is to setting up the master and slave machines
42. So to setup this entire environment in a automated way I have actually created terraform scripts so I do have basic knowledge in terraform also , so these are the primary tools and technologies on which I have been working since past few years