CI/CD workflow for IaC Development & infra Provisioning 🚀  
  
Here's a high level step-by-step explanation for beginners  
  
- 𝗗𝗲𝘃𝗢𝗽𝘀 𝗘𝗻𝗴𝗶𝗻𝗲𝗲𝗿 𝗰𝗿𝗲𝗮𝘁𝗲𝘀 𝗮 𝗣𝘂𝗹𝗹 𝗥𝗲𝗾𝘂𝗲𝘀𝘁 (𝗣𝗥), which is a request to merge their Infra changes into a main code branch.  
  
- 𝗔𝗽𝗽𝗿𝗼𝘃𝗮𝗹/𝗠𝗲𝗿𝗴𝗲 𝗣𝗥: The pull request must be reviewed and approved by someone with the authority to do so. If approved, the infra code is merged.  
  
- 𝗣𝘂𝗹𝗹 𝗔𝗽𝗽𝗿𝗼𝘃𝗲𝗱 𝗖𝗼𝗱𝗲 / 𝗣𝘂𝗹𝗹 𝗦𝗵𝗮𝗿𝗲𝗱 𝗟𝗶𝗯𝗿𝗮𝗿𝘆 / 𝗪𝗲𝗯𝗵𝗼𝗼𝗸 𝗧𝗿𝗶𝗴𝗴𝗲𝗿: Once the code is approved and merged, the updated code is pulled from the repository. A shared library (common code used by many projects) might also be pulled if needed. A webhook then triggers the next steps in the process automatically.  
  
- 𝗖𝗿𝗲𝗮𝘁𝗲𝘀 𝗗𝘆𝗻𝗮𝗺𝗶𝗰 𝗣𝗶𝗽𝗲𝗹𝗶𝗻𝗲 𝗕𝗮𝘀𝗲𝗱 𝗼𝗻 𝗕𝗿𝗮𝗻𝗰𝗵: A deployment pipeline is dynamically created based on the branch of code that was merged.  
  
- 𝗜𝗻𝘁𝗲𝗴𝗿𝗮𝘁𝗶𝗼𝗻 𝗧𝗲𝘀𝘁𝘀 / 𝗟𝗶𝗻𝘁 𝗧𝗲𝘀𝘁𝗶𝗻𝗴 / 𝗩𝗮𝗹𝗶𝗱𝗮𝘁𝗲 𝗜𝗻𝗳𝗿𝗮 𝗖𝗼𝗻𝗳𝗶𝗴𝘀: The IaC code undergoes several tests:  
-> Integration tests check if the different pieces of the code work together.  
->Lint testing checks the code for errors and adherence to coding standards.  
  
- Infra Configs Validation ensures that the infrastructure (like servers and databases) configuration is correct.  
  
  
- 𝗡𝗼𝘁𝗶𝗳𝗶𝗰𝗮𝘁𝗶𝗼𝗻: If the tests pass, a notification is sent out, probably to inform the team of the successful integration.  
  
- 𝗕𝗹𝗼𝗰𝗸 𝗣𝗥 𝗠𝗲𝗿𝗴𝗲 & 𝗨𝗽𝗱𝗮𝘁𝗲 𝗙𝗮𝗶𝗹𝗲𝗱 𝗦𝘁𝗮𝘁𝘂𝘀: If the tests fail, the system blocks the merging of the PR and updates the status to 'failed'.  
  
- 𝗧𝗿𝗶𝗴𝗴𝗲𝗿 𝗗𝗲𝗽𝗹𝗼𝘆 𝗣𝗶𝗽𝗲𝗹𝗶𝗻𝗲: If everything is successful, the deployment pipeline is triggered to move the code to the next stages until it reaches production.  
  
- 𝗖𝗼𝗻𝘁𝗶𝗻𝘂𝗼𝘂𝘀 𝗩𝗲𝗿𝗶𝗳𝗶𝗰𝗮𝘁𝗶𝗼𝗻: There's a continuous verification process, likely automated tests running in the production environment to ensure everything is working as expected.  
  
- 𝗗𝗲𝗽𝗹𝗼𝘆𝗺𝗲𝗻𝘁 𝗦𝘁𝗮𝘁𝘂𝘀 𝗡𝗼𝘁𝗶𝗳𝗶𝗰𝗮𝘁𝗶𝗼𝗻: A final notification is sent out to inform the team of the deployment status.  
  
This kind of automation is essential for modern IaC development, allowing teams to deploy new infra features and fixes quickly and reliably.  
  
𝗡𝗼𝘁𝗲: Jenkins is included for reference. You can use any tool in place of Jenkins, such as GitHub Actions, GitLab CI, etc. The process of creating a pipeline might differ, but the overall process remains the same  
  
𝗣𝗦: ♻️ Repost if you find this useful. It helps us growing the like minded community :)  
  
Did you know about this ? Are you using the workflow already? What are your experiences?  
  
⬇️ Discuss in the comments below! ⬇️  
  
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