Ayaz Hasan
[20K-1044]

Date:

MID 1

Devops:

* set of practice & culture changes
* supported by automation tool & lean process
* create automated soft delievery pipeline.

Automated Soft Delivery Pipeline

* Series of automated steps that take code from development to operation & production. (Dev)

1- Code Development:

* Developers write and modify code to add new feature. Use Tools like (IDEs)

2- Version Control

* Devlopers use VC system (Git) to track changes in codebase
* changes record as "commit"

3- Automated Testing

* Before changes are integrated in main codebase, Automated Test run & check errors & ensure this new code doesn't break existing functionality. (Unit Test etc).

4- Build Automation

passing the Test, code is built in executable file or package.

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(Ops)

5- Deployment

* Code deployed to a production environment
* (Kubernetes, Docker)

6- Monitoring

Tools track the performance of app in real-time, If problem occur, logs provide detail

*Lean Soft Development (LSD)

* being efficient & not add unnecessry features.
* MVP (Minimum Viable Product)
  * creating the most basic version of your product release it, get feedback & then make it better.

Three Key Principle of Devops

1- System Thinking:

* Focus on whole system, rather than just how individual teams or group perform
* looking at entire forest not individual trees.

2- Amplifying feedback loop:

* Info share quickly b/w teams including feedback from users (inside or outside the organization

Improve

* Build automate Test into pipeline so developer get feedback
* embad operation engineer

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3- Culture of Continual Experiment

* create environment where people not afraid of experiment & make mistake.
* rewards the teams for try new idea.

7 Principles:

1) Eliminate waste
2) Building Quality
3) Creating Knowledge
4) Differing commitment
5) Deliver Fast
6) Respect People
7) Optimize the whole

AZURE

Azure cloud:

offer cloud based product include compute, storage, database, network etc,

cloud computing

how resources are delivered & manage over the internet.

Azure Active Directory

* Allow people to access various services & app in org.
* Single Sign-in (SSO) using one credential to access multiple services.

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* Cloud Architecture

* front-end (device use to access cloud)
* Back-end (servers & Storage)
* Delievery Model (Saas, Paas, Iaas)
* Network (IP, routing etc)

* Azure Service Plan

* define computing resources & location for web app or service you want to run in Azure
* Service plan lets you specify how much memory or power your app should have.
* It allow you to choose region wher app will hosted.

* Azure App Service

* platform to build, deploy & scaling web apps
* put your app in container to keep them organized & easy to manage.
* App can easily connect to other services to store data, send emails.
* when more people use your app Azure automatically add more resources like make computer faster (Auto Scaling)
* Test changes to your app before put them in production.
* Deploy using portal or azure CLI.

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Azure Function

* It is like small program called "function" because it perform specific task
* These function are serverless, mean you dont have to worry about managing computer survey
* Azure function are designed to response to event or triggers. like when file is upload, msg is reamed etc.
* **Function App:**
  container where function store
* **Trigger**
  event that start the function
* **Input/output Binding**
  like a pipeline that connect funct to data source help funct to get data in or out.
* **Stateless**
  * they dont remember things b/w uses.

* **Execution Content**
  Inform your function about surroundings. like what is available & where funct is running.

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Azure Monitor

help you keep on eye on how well your function work & doing.

App Insight

help you provide deeply behavior of function

Debugging Tools

help you to find & fix issues in your code.

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GIT HUB

* Development platform that lets you host, review code & mange project

GIT:
Distributed version control system (DVCS) that allows mulliple dovelper to work together. It allow yay to create diff branches.

(DVCS):
allow multiple people to have their own copies of project & then merge together.

Branches:
allow you to create branches to work on specific features without disrupting main project.

GITHUB:
cloud platform simplifies process of collaborating on project. & provide website, CLI tools that allow developer to work together.

1- Issues
To-do list, create issues to report problem or suggest improvement. & the team discuss them

2- Notification
get alert about activities like comment on issues - pull req reviews.

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3- Branch

Discuss above

4- Commit

It is a snapshot of a change to one or more files on a branch.

5- Pull Request

* mechanism used to signal that the commit from one branch are ready to merge into another branch. review it & after accept merge into base branch.

6- Actions

provide task automation & workflow

7- Cloning & forking

* clone mean make a copy of repository in local machine & push change from local to remote repo.
* fork mean copy of repo on github then clone on local machine. using pull req you can change in original repo.