Summary

- Base development of an app is easy
- Deployment is hard!
- Infrastructure
  - Always on servers - auto restart
  - Always on network
  - Uninterrupted power
  - Monitoring and logging

Services Approach

- SaaS
- IaaS
- PaaS

Service approach

- Specialization
- Datacenter operators specialize in infrastructure
- Developers focus on app development
- Standard software deployments?

Software-as-a-Service (SaaS)

- Online office platforms
  - Google docs, spreadsheets, Office 365
- Content Management Systems
  - Drupal, Wordpress
- Issue tracking
  - Trello, Redmine

Hosted solutions: all the software is installed and maintained

Infrastructure-as-a-Service (IaaS)

- Raw machines (or virtual machines)
- Power, networking taken care of
- Install your own OS
  - Manage OS upgrades, security patches, software updates

Cloud compute systems:

- AWS
- Google Compute Engine
- Azure
- DigitalOcean, Linode, ...

Platforms

- Combination of hardware and software
- Specific hardware requirements
  - Computing power, RAM, disk
- Specific software requirements
  - OS version, automated updates and security, firewalls
- Custom application code
  - Flask, RoR, Laravel, ...

Platform-as-a-Service

- Provider takes care of:
  - Power, network, machine management
  - OS installation, security patches
  - Base application platform: Python+Flask, PHP+Laravel: maintain multiple versions, manage security updates
  - Multiple databases and connectivity options
- Developer needs to:
  - Manage application code
  - Specify requirements on server sizing, database, connectivity
- Scaling
  - Combined inputs from developer and provider

Examples

- Replit: https://replit.com/@nchandra/flasktest#main.py

- Glitch: https://glitch.com/edit/#!/gusty-sage-constellation?path=server.py%3A1%3A0
- GAE: https://flasktest-328815.uc.r.appspot.com/
- https://shell.cloud.google.com/?page=editor&show=ide%2Cterminal
-

Summary

- PaaS: provide platforms to build on
  - developers focus on code
- Varying degrees of complexity, ease of use
  - Replit, Glitch - GAE, AWS ElasticBeanStalk, Heroku
- Integrate with other code development practices:
  - version control
  - continuous integration (testing)
  - continuous deployment
  - scaling and automation