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Microservices and DevOps

DevOps and Container Technology

Cloud Computing

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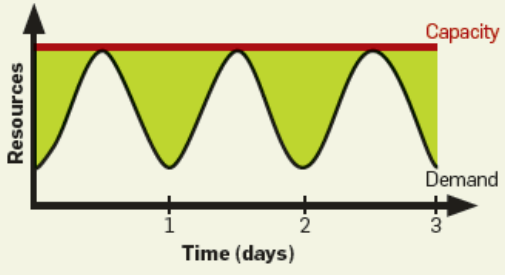
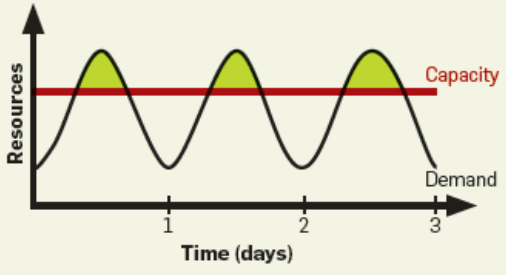
Why?

- Utilization Problem

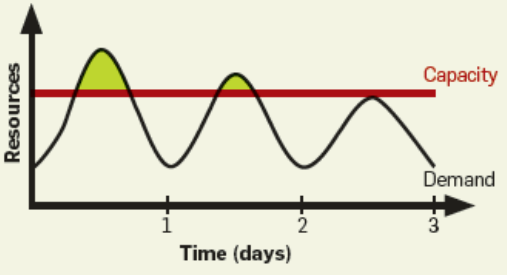
Figure 2. (a) Even if peak load can be correctly anticipated, without elasticity we waste resources (shaded area) during nonpeak times. (b) Underprovisioning case 1: potential revenue from users not served (shaded area) is sacrificed. (c) Underprovisioning case 2: some users desert the site permanently after experiencing poor service; this attrition and possible negative press result in a permanent loss of a portion of the revenue stream.



(a) Provisioning for peak load



(b) Underprovisioning 1



(c) Underprovisioning 2

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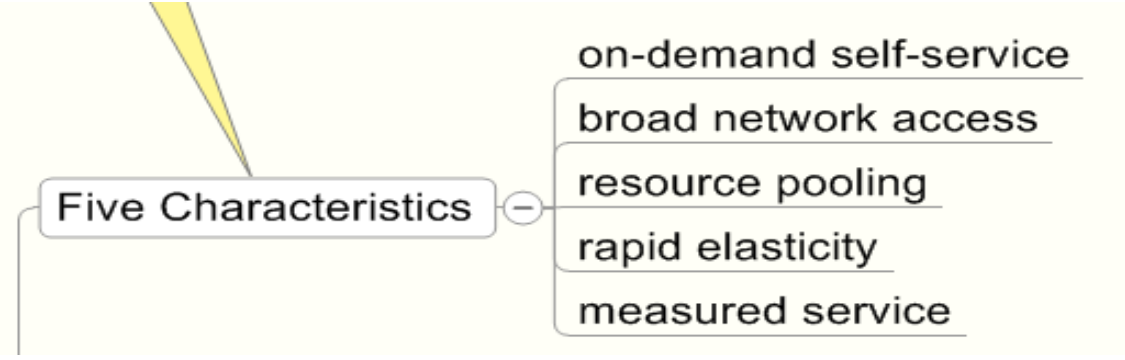
NIST characteristics

- A short and on the spot paper: the NIST paper



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Service Models

- SaaS: Software as a service
  - End user applications accessible in the cloud, typically through web browsers
  - Exercise: Give examples

- PaaS: Platform as a service
  - Programming libraries, services, tools allowing applications to be build utilizing cloud features
  - Exercise: Give examples

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Service Models

- IaaS: Infrastructure as a Service
  - Provide virtual processing and storage capacity, i.e. the actual computing infrastructure
  - Exercise: Give examples
- FaaS: Function as a Service
  - Provide *single function* as a cloud hosted service
  - Aka ‘serverless architecture’

1. **Fundamentally, FaaS is about running backend code without managing your own server systems or your own long-lived server applications.** That second

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Comparing

- Why are some cloud service models much easier to spot than others?

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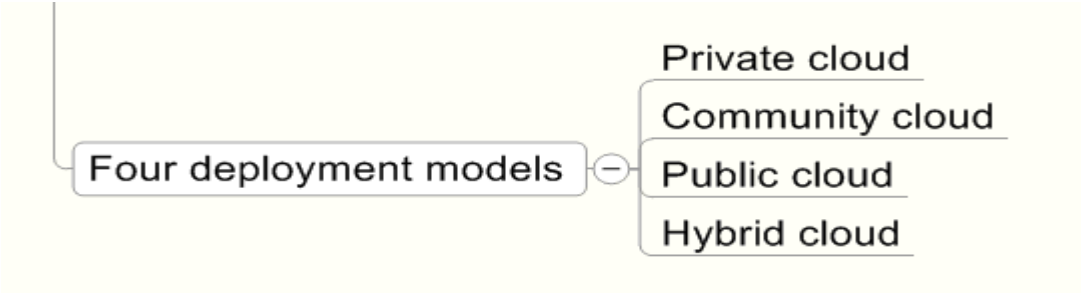
Deployment models



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In Practice

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Find yourself a suitable provider

- Consider
  - Cost and how easy it is to calculate cost
    - I prefer flat rate models!
  - Free-tier if you want to save a few bucks
  - Learnability Spend 2 minutes or 5 hours?

- My recommendations (I have no affilitation)
  - Cloud.dk support Danish industry
  - digitalocean one-click docker !