

A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is light green. They are positioned diagonally, with the blue one partially covering the green one.

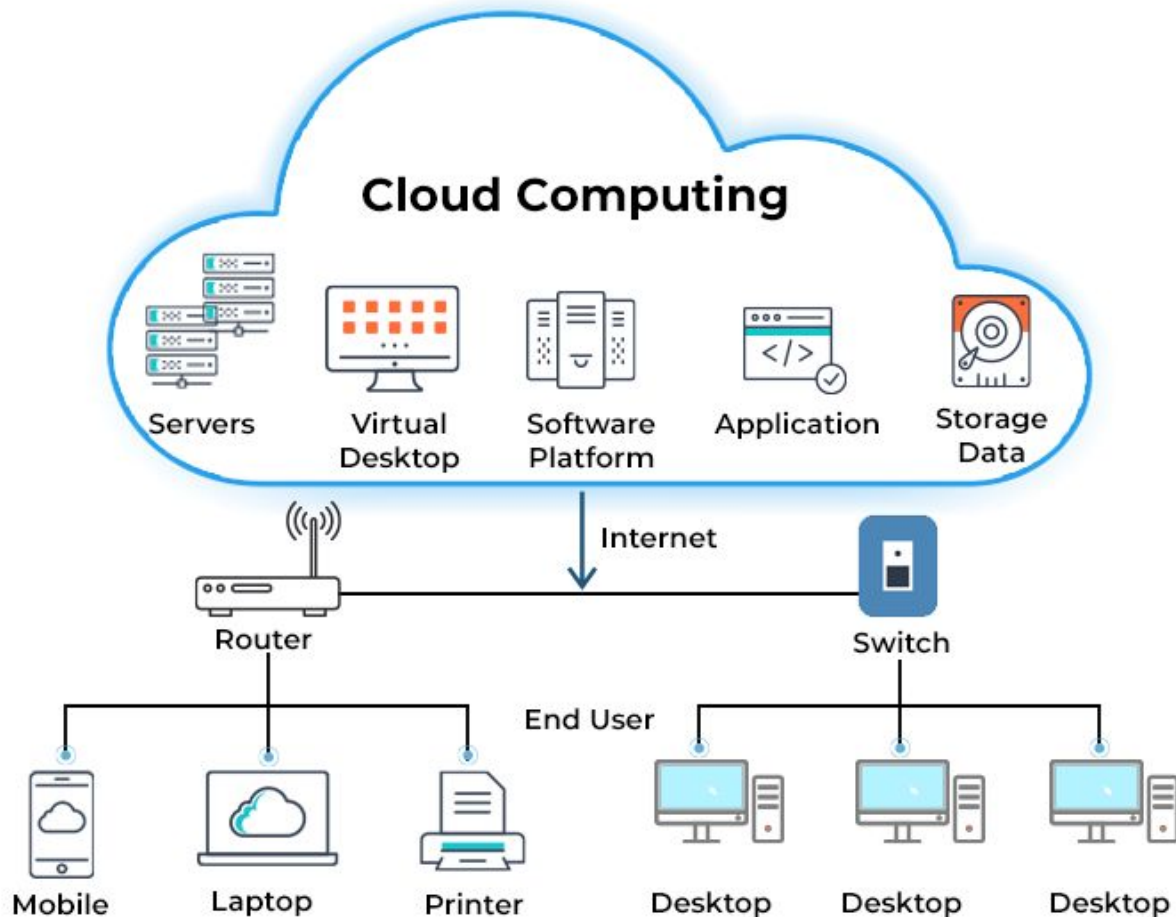
Cloud Computing

Luscombe Lab Tech Meeting - 2022-06-15
Chris Cheshire

What is cloud computing?

Any hosted computing resource that is offered as a service as part of a public, private or hybrid network

CLOUD COMPUTING ARCHITECTURE



Why?

- Agility
- Cost
- Complexity
- Maintenance
- Performance
- Scalability
- Security





Comparisons to Scientific Computing

- Same architecture
- No direct access to compute nodes - services built on top and offered instead

Top 10 Cloud Providers





Cloud clients

Web browser, mobile app, thin client,
IoT devices, machines, ...



Cloud application (SaaS)

CRM, ERP, web conferencing, group chat, email,
analytics, virtual desktop, games, ...

Cloud platform (PaaS)

Application runtime, database, web
server, developer services, data lake, ...

Resources
more
abstracted
(e.g. serverless)



Cloud infrastructure (IaaS)

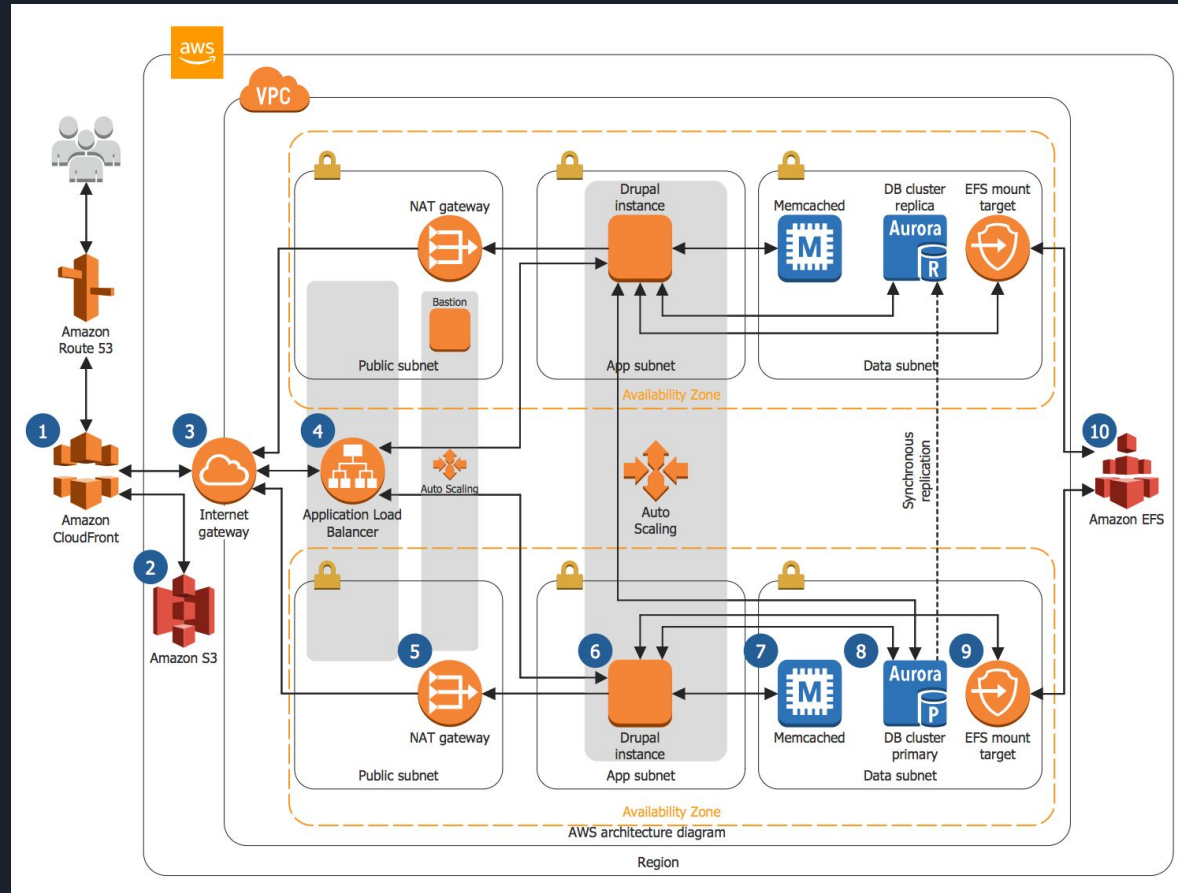
Virtual machines, bare metal servers,
storage, load balancers, networking, ...

Resources less
abstracted

Deployment model

Public cloud, hybrid cloud, multicloud,
private cloud

Cloud Architecture





Case study - genomics pipeline



Other AWS Services