Unit 2: Welcome to your home

Why Compute in the Cloud?

Lesson 12

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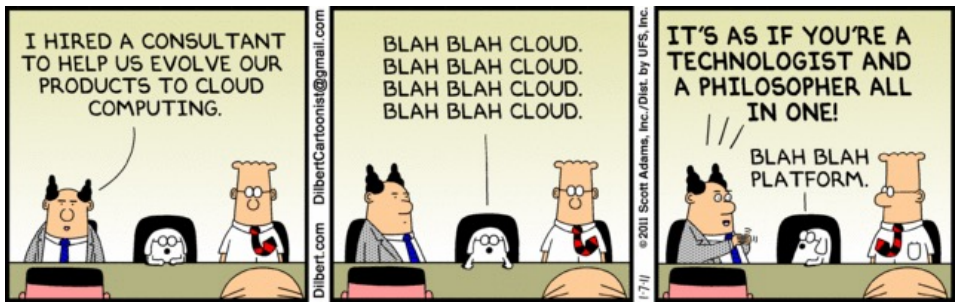

Overview of unit

Objectives:
- Fundamentals of working in UNIX
- Fundamentals of working in the cloud

1. Why UNIX?
2. Why AWS and the Cloud?
3. Setting up a UNIX VM
4. SSH
5. Key-based Auth
6. Basic UNIX commands & admin
7. Installing python
8. Intermediate UNIX tools
9. Working remote
10. Text editors
11. Advanced customization
12. HW 2

Lesson overview

Objectives

- Understand the architecture of cloud computing
- Understand why cloud computing is essential to modern data science

Outline

- Why our laptops and desktops suck when it comes to data science
- Virtual machines
- The cloud
- Data science cloud computing
- AWS and data science

Why laptops and desktops aren't great

- Limited compute power
- Limited (or no) special hardware
- Limited storage
- Poor proximity to other resources
- Insecure
- Uptime

Enter the virtual machine

EC2 (aws)

Slices of a computer acting like its own computer

Living in the cloud

Services in the cloud

Compute
- EC2
- Lightsail
- Lambda
- Batch
- Elastic Beanstalk
- Serverless Application Repository
- AWS Outposts
- EC2 Image Builder

Storage
- S3
- EFS
- FSx
- S3 Glacier
- Storage Gateway
- AWS Backup

Database
- RDS
- DynamoDB

Blockchain
- Amazon Managed Blockchain

Satellite
- Ground Station

Quantum Technologies
- Amazon Braket

Management & Governance
- AWS Organizations
- CloudWatch
- AWS Auto Scaling
- CloudFormation
- CloudTrail
- Config
- OpsWorks
- Service Catalog
- Systems Manager
- AWS AppConfig

Analytics
- Athena
- EMR
- CloudSearch
- Elasticsearch Service
- Kinesis
- QuickSight
- Data Pipeline
- AWS Data Exchange
- AWS Glue
- AWS Lake Formation
- MSK

Security, Identity, & Compliance
- IAM
- Resource Access Manager
- Cognito
- Secrets Manager
- GuardDuty
- Inspector
- Amazon Macie
- AWS Single Sign-On

Business Applications
- Alexa for Business
- Amazon Chime
- WorkMail
- Amazon Honeycode

End User Computing
- WorkSpaces
- AppStream 2.0
- WorkDocs
- WorkLink

Internet Of Things
- IoT Core
- FreeRTOS
- IoT 1-Click
- IoT Analytics
- IoT Device Defender
- IoT Device Management
- IoT Events
- IoT Greengrass

Data science cloud computing

Some AWS services for data science

Lesson wrap-up

Takeaways

- The cloud has resources our laptops and desktops could never have
- We need those resources

Up next

- Creating a UNIX VM in the Amazon cloud