AGENDA

- Types of Cloud
- Why use Cloud
- Public Cloud Adoption
- Pros/Cons of largest Hyperscale Providers
- Security Misconceptions
- Cloud Spend Waste
- Strategies for Cost Reduction
- Automation Example
- Resources – links to calculators

Logging in
- Overview of the environment – dashboards, menus
- Creating Resource Groups & Tags
- Adding new services
- Creating Virtual Machines & Network Security Groups
- Storage Options
- Deleting Resource Groups
- Getting Help
TYPES OF CLOUDS

- Private
- Public
- Multi Cloud
- Hybrid
- Specialty Cloud
AWS

Pros

- Market leader for 10 years
- Massive Scope of operations
- Comprehensive Global Network

Cons

- Cost Structure
- Support Fees
- Overwhelming implementation choices
AZURE

Pros
- Tight Microsoft products integration
- Built on the existing customer base

Cons
- Customer support issues
- Partner ecosystem
GCP

Pros

- Strong Offer in Container
- Specializes in High compute offerings
- Strong AI/ML capabilities

Cons

- Limited Offerings
- Limited Global Data Centers
- Secondary provider, not a strategic provider
SECURITY MISCONCEPTIONS
Troubling Statistics

75% Moving data to the cloud

1/2 Expect security breaches

57% Think security is cloud provider’s responsibility

Cloud Security Alliance – Cloud Migration Study 2021
So, what happens when you move into a public cloud?
Who is Responsible?

Cloud **Customer** Responsibility
- Data
- Applications
- Identity & Access Management

Cloud **Customer** Responsibility
- Operating System
- Firewall Configuration

Cloud **Customer** Responsibility
- Network Traffic Protection
- Data Encryption
- Integrity

Cloud **Provider** Responsibility
- Compute
- Storage
- Database
- Networking

Shared Responsibility
MINIMIZING CLOUD SPEND WASTE
CLOUD SPEND WASTE

2018: $12.9 Billion
2019: $14 Billion
2020: $17.6 Billion
2021: $21 Billion
UNDERSTAND COST FACTORS

**Type:** Compute, Memory, General  
**Size:** CPU/GPU and memory – i.e., large, x-large  
**Purchasing Method:** On Demand, Reserved, Spot  
**Region:** Where instance will be launched

**Compute // Serverless Compute**
- **Requests:** Number of executions your function will perform  
- **Memory:** The amount of allocated memory per function  
- **Time:** Average execution time  
- **Region:** Where function will be launched

**Database // Serveless DB**
- **Type:** Based on Database Transaction Units
- **Size:** Based on the number of virtual cores
- **License:** Open Source or Commercial
- **Purchase Method:** (On Demand, Reserved, Spot)

**File Storage**
- **Type of Storage:** Amount of redundancy and accessibility speed
- **Data Transfer:** In/out Frequency and number of requests
- **Quantity:** Number of files storage units requested
- **Region:** Where data storage is requests

**Hidden Costs**
Strategies for Cost Savings

**RIGHT SIZE**
Right Size the machine for the job

**SPRAWL CONTROL**
Control sprawl of virtual machines

**SHUTDOWN SCHEDULE**
Control running hours for resources

**DISCOUNTS**
If discount available, use it!

**EXPIRATION DATE**
Monitor & delete expired instances

**TAGS**
Keep track of resources with logical tags
Strategies for Cost Savings

**ORPHAN CHECK**
Check for orphaned storage and lingering snapshots

**LOGGING**
Log user activities for audit and cross reference

**ALERTS**
Alerts and alarms notify you of reaching budget constraints

**BUDGETS**
Utilize budgets that will ensure you won’t overspend

**LIFECYCLE MGMT**
Automatically move data to a less expensive storage or purge data

**AUTOMATE**
Use Templates to stand-up/bring down stacks
Automation Example

{  "Monday-Thursday":{    "Start":"9",    "Shutdown":"17"  },  "Friday":{    "Start":"9",    "Shutdown":"16"  },}
## Resources

<table>
<thead>
<tr>
<th>AWS</th>
<th>Azure</th>
<th>Google Cloud</th>
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HANDS ON AZURE
LINKS

- A free trial account can be obtained from Microsoft https://azure.microsoft.com/en-us/free/

- Search for “Azure” in the Service-now portal https://Princeton.service-now.com

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https://portal.azure.com