



# COMMUNITY DAY

PUNE 2022



**COMMUNITY DAY**

**PUNE 2022**



# Cost Optimization with AWS

Dr. Rabi Prasad Padhy | 10<sup>th</sup> Dec 2022



**COMMUNITY DAY**

**PUNE 2022**

## Agenda:

- What is AWS Cost Optimization
- How AWS Pricing works
- AWS Cost Optimization Pillars
- AWS Cost Optimization Framework and Cost Governance Model
- AWS Cost Optimization Strategies and Best Practices
- AWS Reserved Services & Savings Plans
- AWS Cost Optimization Tools and Services



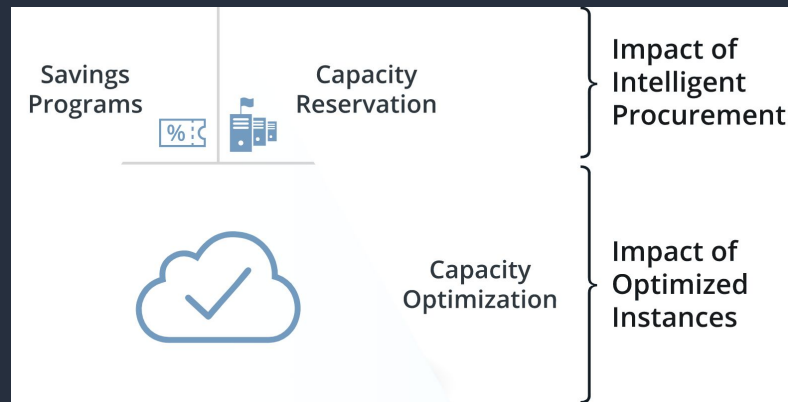
**COMMUNITY DAY**

**PUNE 2022**

## What is Cloud Cost Optimization:

Successfully optimizing cloud costs requires your enterprise to master in two areas:

- **Intelligent Procurement of Cloud Services:**  
Taking advantage of savings programs like AWS Savings Plans and capacity reservations like Amazon Reserved Instances addresses low hanging savings opportunities
- **Intelligent Optimization of Cloud Capacity:**  
Intelligently matching your cloud workloads to the optimal instance and resource configuration





COMMUNITY DAY

PUNE 2022

## How AWS Cloud Pricing Working:

- Cloud Pricing based on the Cloud Data Center Cost, Location, SLA, Reputation etc. Pricing Scheme is Pay-per-use.
- Costs of the Cloud Services can be different for each region because the cost, taxes, manpower etc. for the physical infrastructures and data centers are different from Region to Region.
- For Example : AWS Cloud Region - US East (Virginia) is the default region and always the least expensive. So always select the least expensive regions as per the scenarios, SLA etc.

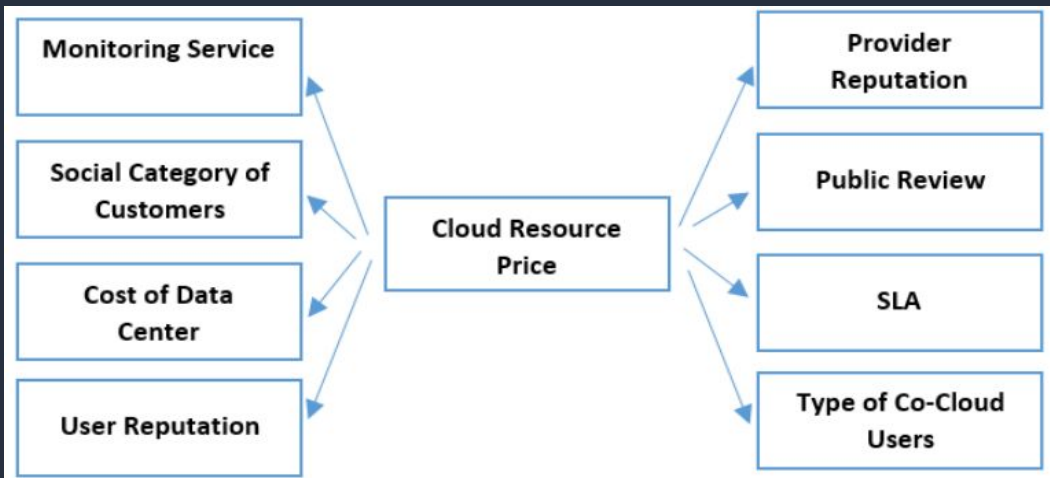
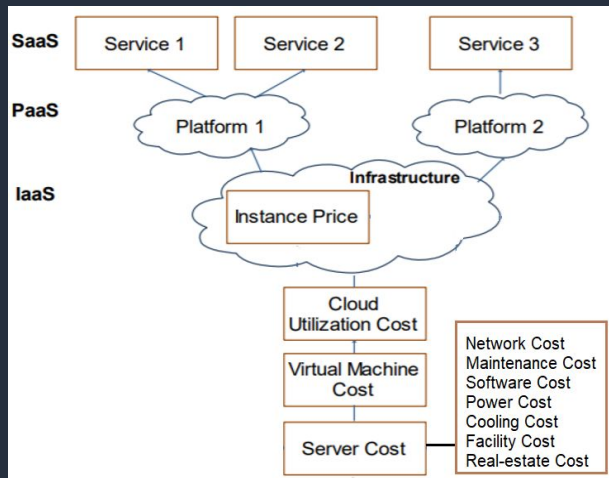




# COMMUNITY DAY

## PUNE 2022

## Factors that can Influence AWS Cloud Pricing:





# COMMUNITY DAY

## PUNE 2022

## AWS Cost Optimization Pillars:

### AWS Well-Architected Framework



**Pillar -1 : Right Sizing**

**Pillar -2 : Match Usage to Storage Class**

**Pillar -3 : Pick The Right Pricing Model**

**Pillar -4 : Increase Elasticity**

**Pillar -5 : Measure, Monitor and Improve**



# COMMUNITY DAY

## PUNE 2022

## Pillar -1 : Right Sizing

**Rightsizing:** Selecting the cheapest instance while meeting performance needs

**Example for Rightsizing :** m4.4xlarge \$2 per hour : Provision and Run then check CPU, RAM, Network, Disk usage then downsize to m4 large only the case if the earlier instance was under utilizing.

**Tools for rightsizing :** VMware Cloudhealth, AWS Trusted Advisor, EC2 Right sizing, Data Dog etc.

## Pillar -2 : Match Usage to Storage Class







# COMMUNITY DAY

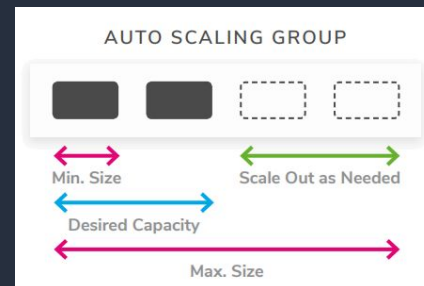
PUNE 2022

## Pillar - 3: Pick The Right Pricing Model

ON-DEMAND INSTANCES	SPOT INSTANCES	RESERVED INSTANCES	SAVINGS PLANE
<ul style="list-style-type: none"><li>• No Commitment</li><li>• High Flexibility</li><li>• No Upfront Payments</li><li>• Easy to Work With</li><li>• Most Expensive Option</li></ul>	<ul style="list-style-type: none"><li>• No Commitment</li><li>• No Flexibility</li><li>• Can Get Terminated by AWS</li><li>• Very Difficult to Work With</li><li>• Cheapest Possible Option</li></ul>	<ul style="list-style-type: none"><li>• 1 or 3 Year Commitment</li><li>• Low/Moderate Flexibility</li><li>• Option for Upfront Payments</li><li>• Difficult to Work With</li><li>• Cheap</li></ul>	<ul style="list-style-type: none"><li>• 1 or 3 Year Commitment</li><li>• Moderate/High Flexibility</li><li>• Option for Upfront Payments</li><li>• Easy to Work With</li><li>• Cheap</li></ul>

## Pillar - 4: Increase Elasticity

Enable auto-scaling feature that scale in and scale out based on your application traffic needs. This is where we match the capacity to the demand that is possible monitoring the current usage of compute requirements over time and allows us to define thresholds. We can use cloud watch events for scaling action.





**COMMUNITY DAY**

**PUNE 2022**



## **Pillar - 5: Measure, Monitor and Improve**

**Measure, monitor, and improve** – To ensure that we extract the full economic potential of the AWS Cloud at any scale, we want to:

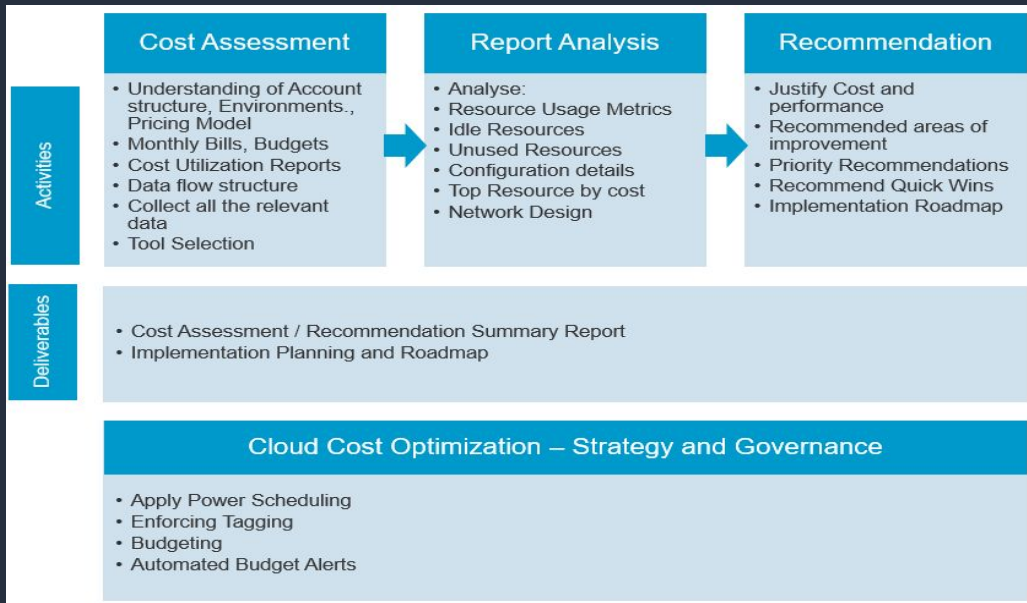
- Define and enforce cost allocation tagging.
- Define metrics, set targets, and review at a reasonable cadence.
- Enable teams to architect for cost via training, visualization of progress goals, and a balance of incentives.
- Assign optimization responsibility to an individual or to a team



# COMMUNITY DAY

## PUNE 2022

# Developing and Implementing a AWS Cloud Optimization Framework



## AWS Cost Governance :




- **Enforcing Tagging** : Enforcement of Global Tagging Policy enables users to manage resources, search and track cost.
- **Budgeting** : Defining and allocating Cloud budgets for business units to avoid cost overrun.
- **Automated Budget Alerts**: Enable Budget Alerting when the threshold are breached.
- **Cloud FinOps**: It's a collection of cloud financial management best practices.



# COMMUNITY DAY

## PUNE 2022

## Cloud Cost Optimization Services:

Cost Optimization Pillars			
Right Sizing Services	Trusted Advisor EC2 Right Sizing	Azure Advisor	NA
Right Pricing Model	S3 Calculator TCO Calculator	Azure Calculator TCO Calculator	GCP Calculator TCO Calculator
Right Storage Class	S3 Analytics	Azure Cost Management	GCP Calculator
Increase Elasticity	Autoscaling	Scale-set	Autoscaling
Monitor and Improve	CloudWatch Metrics Cost Optimization Monitor	Azure Monitor Metrics	GCP Operations Suite
Periodic Review	AWS Cost Explorer Cost Usage & Report	Azure Cost Management	GCP Billing Reports
Budgeting and Alerting	AWS Budget AWS Cost Explorer AWS Billing Dashboard	Azure Cost Management Azure Budgets	GCP Billing Reports Budget Alerts



**COMMUNITY DAY**

**PUNE 2022**



# Thank you!

See you at the AWS Community Day Pune 2023

