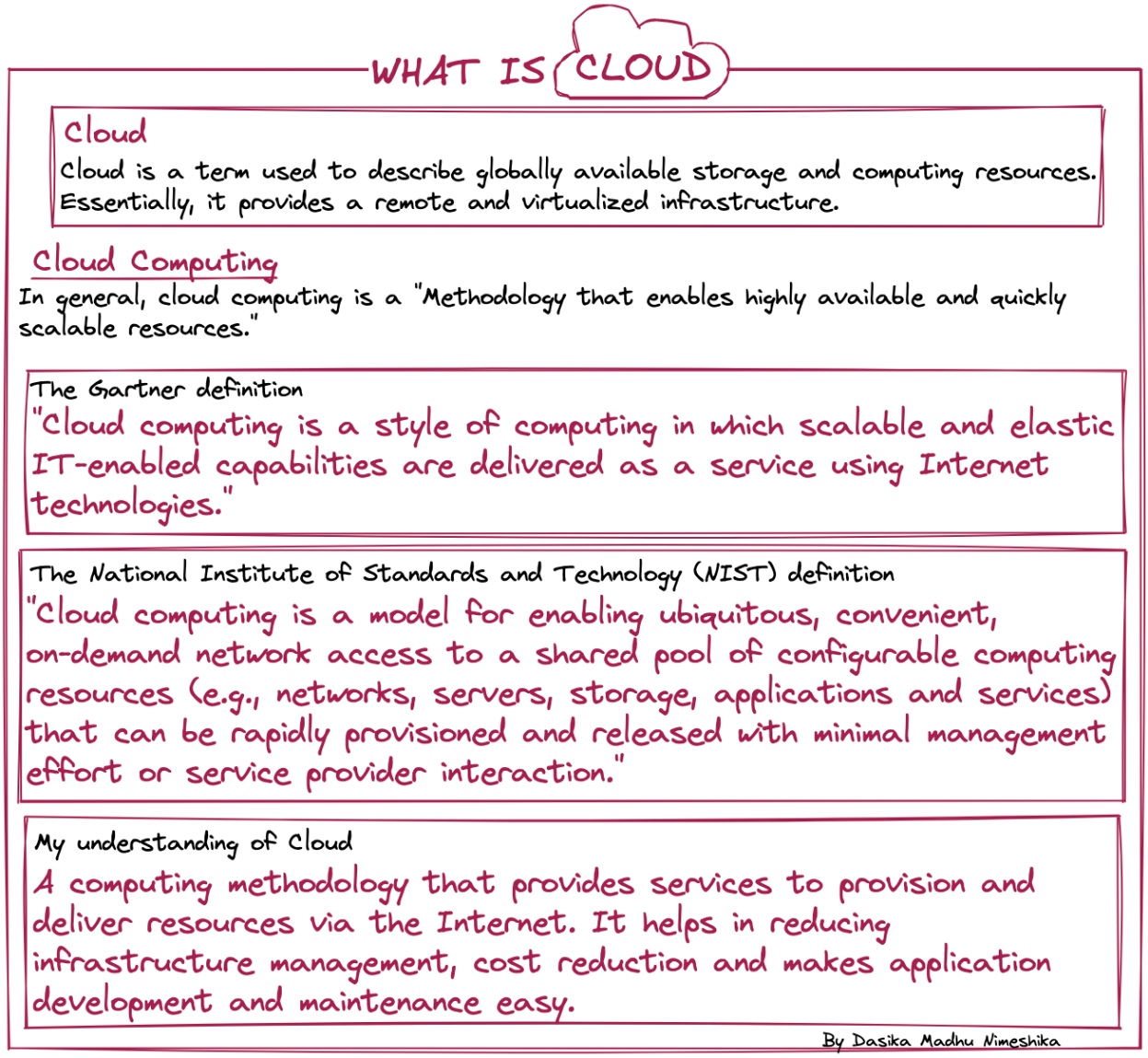
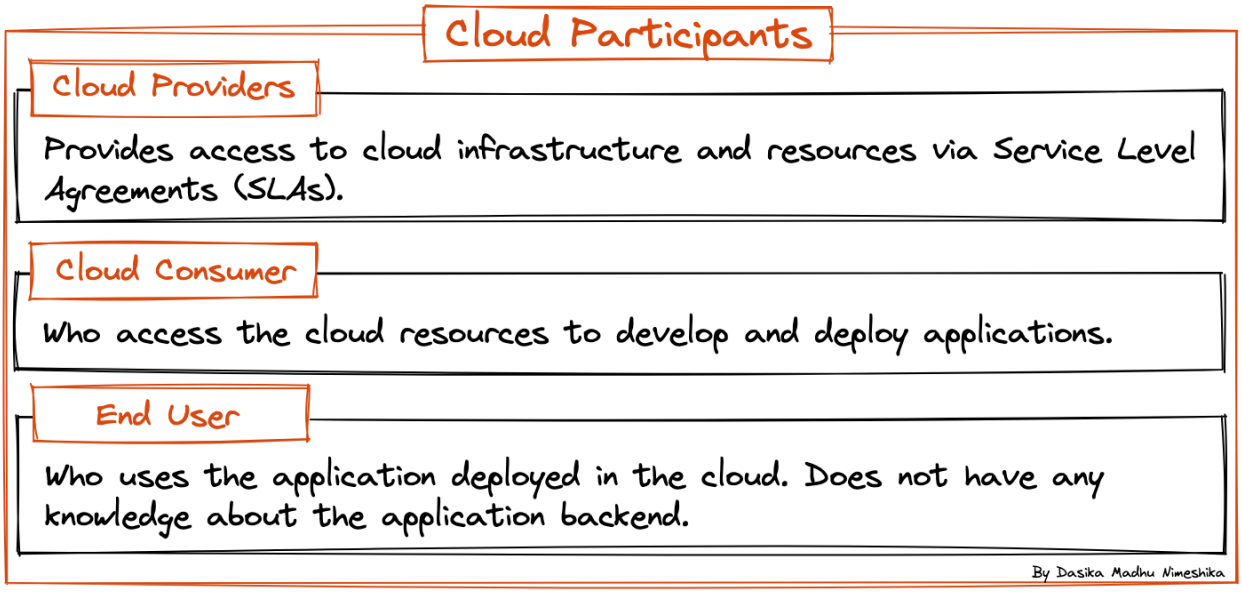
AWS-BASICS

CLOUD & CLOUD COMPUTING

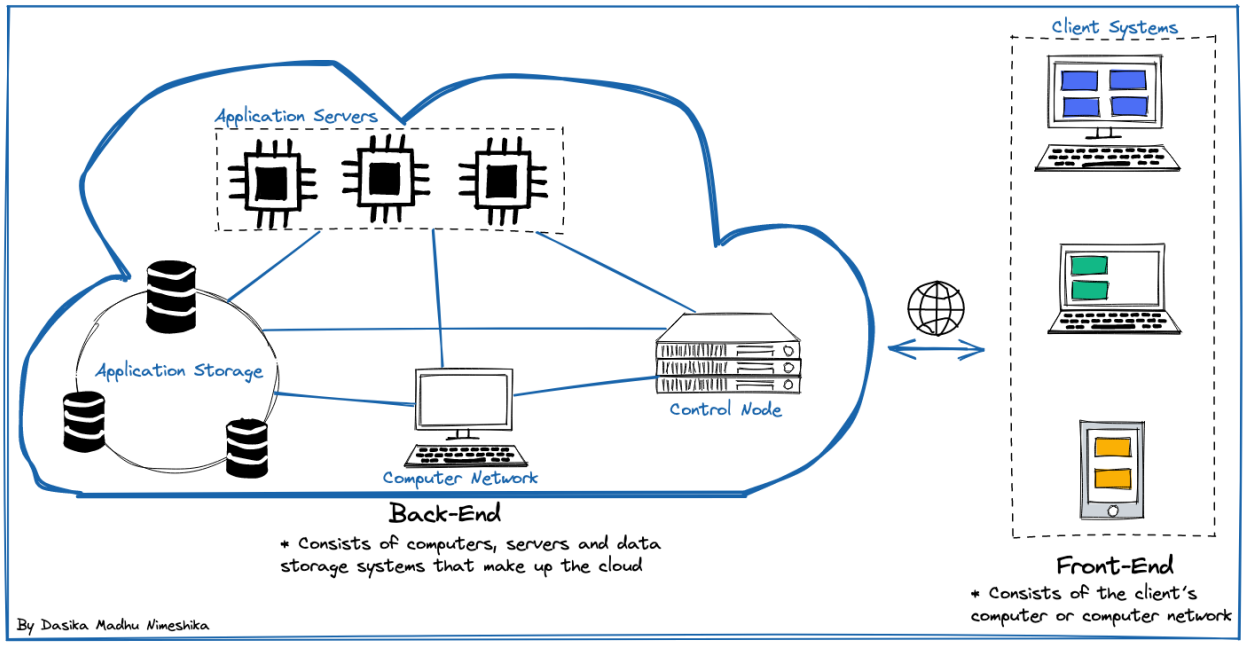


CLOUD PARTICIPANTS



HOW CLOUD WORKS

- The back-end is provided by the Cloud Provider - offers services such as storage, compute, database, traffic control mechanisms, and security postures.
- The front-end consists of the client systems which can access the cloud resources from anywhere globally.

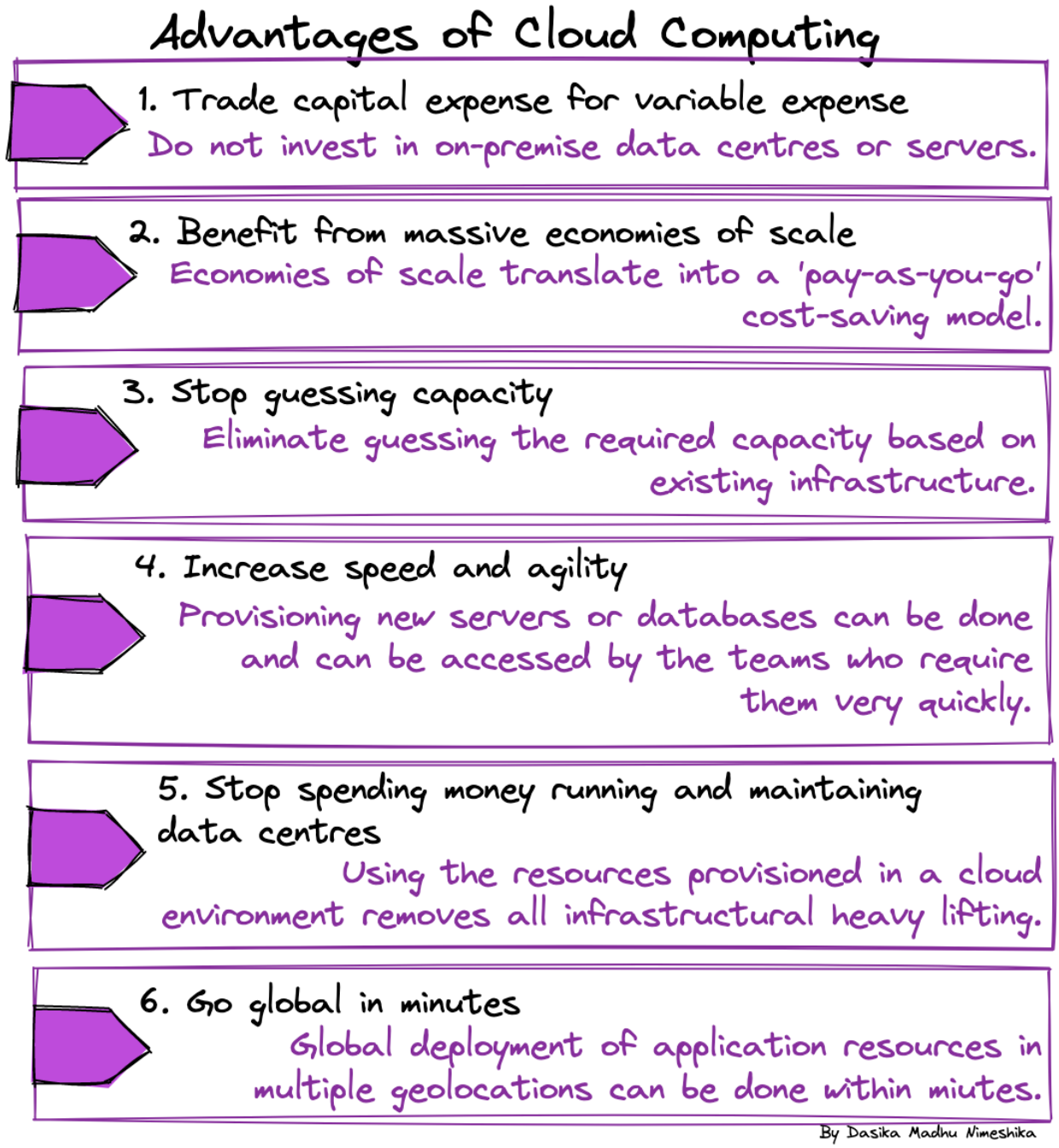


ON-PREMISE V/S CLOUD

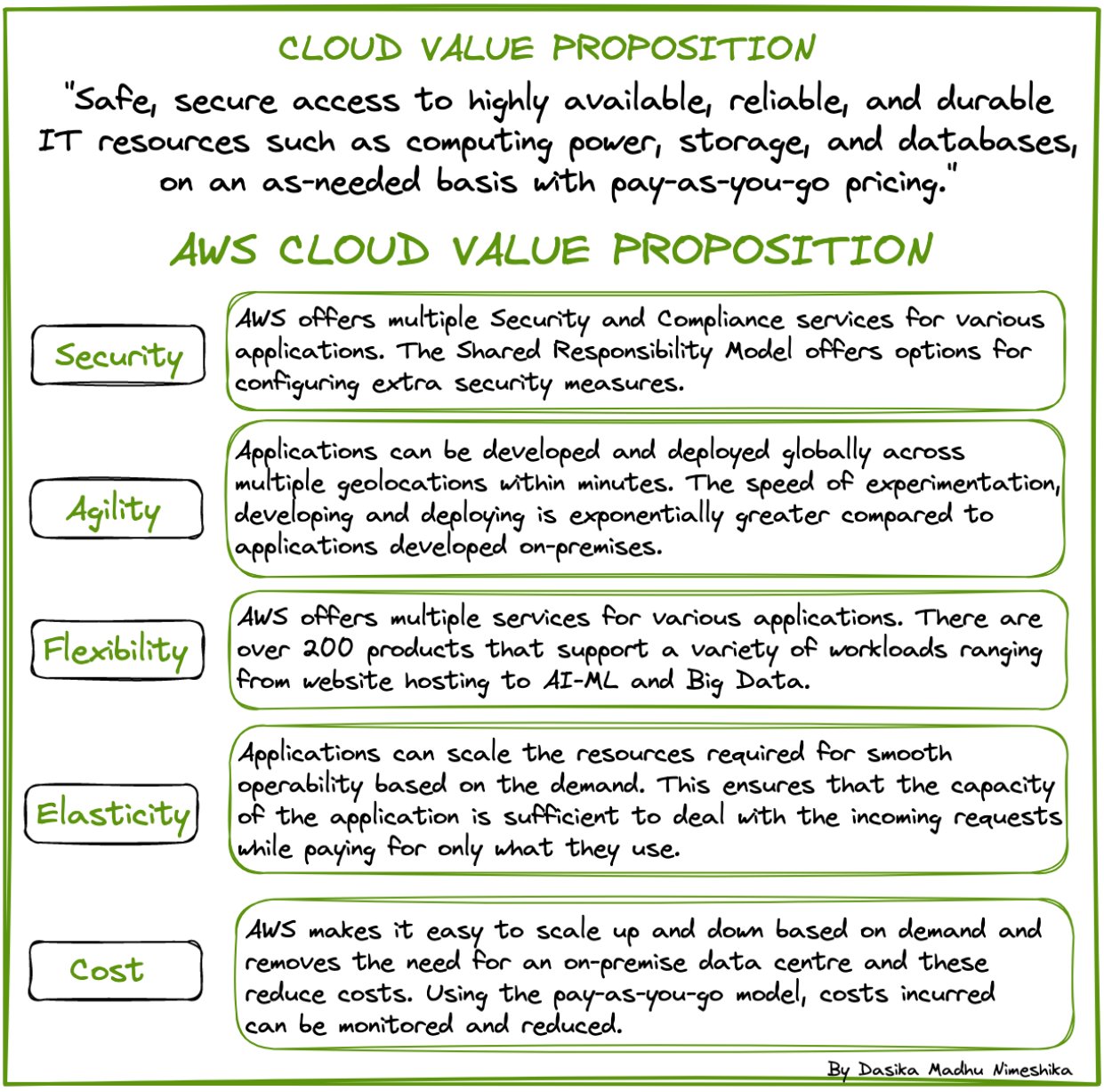
On-Premises	Cloud
Enterprise resources such as storage, compute, databases and more are physically available within the organization boundaries.	Enterprise resources such as storage, compute, databases and more are provided by a Cloud Provider and can be virtually accessed from anywhere.
Setting up and maintaining enterprise infrastructure is very costly.	The Cloud Provider is responsible for the hardware infrastructure setup and maintenance.
Implementing security within the data centre and applications deployed within them is difficult.	The Cloud Provider provides additional security configurations for the applications being deployed.

By Dasika Madhu Nimeshika

ADVANTAGES OF CLOUD COMPUTING

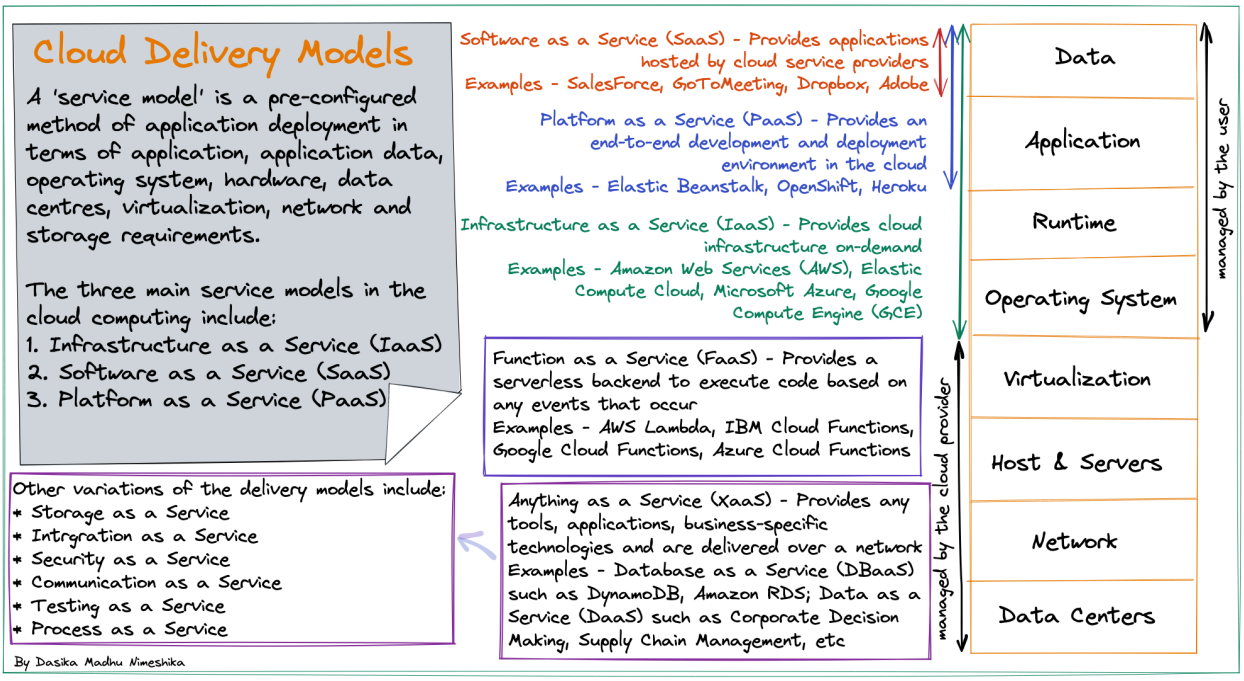


AWS CLOUD VALUE PROPOSITION

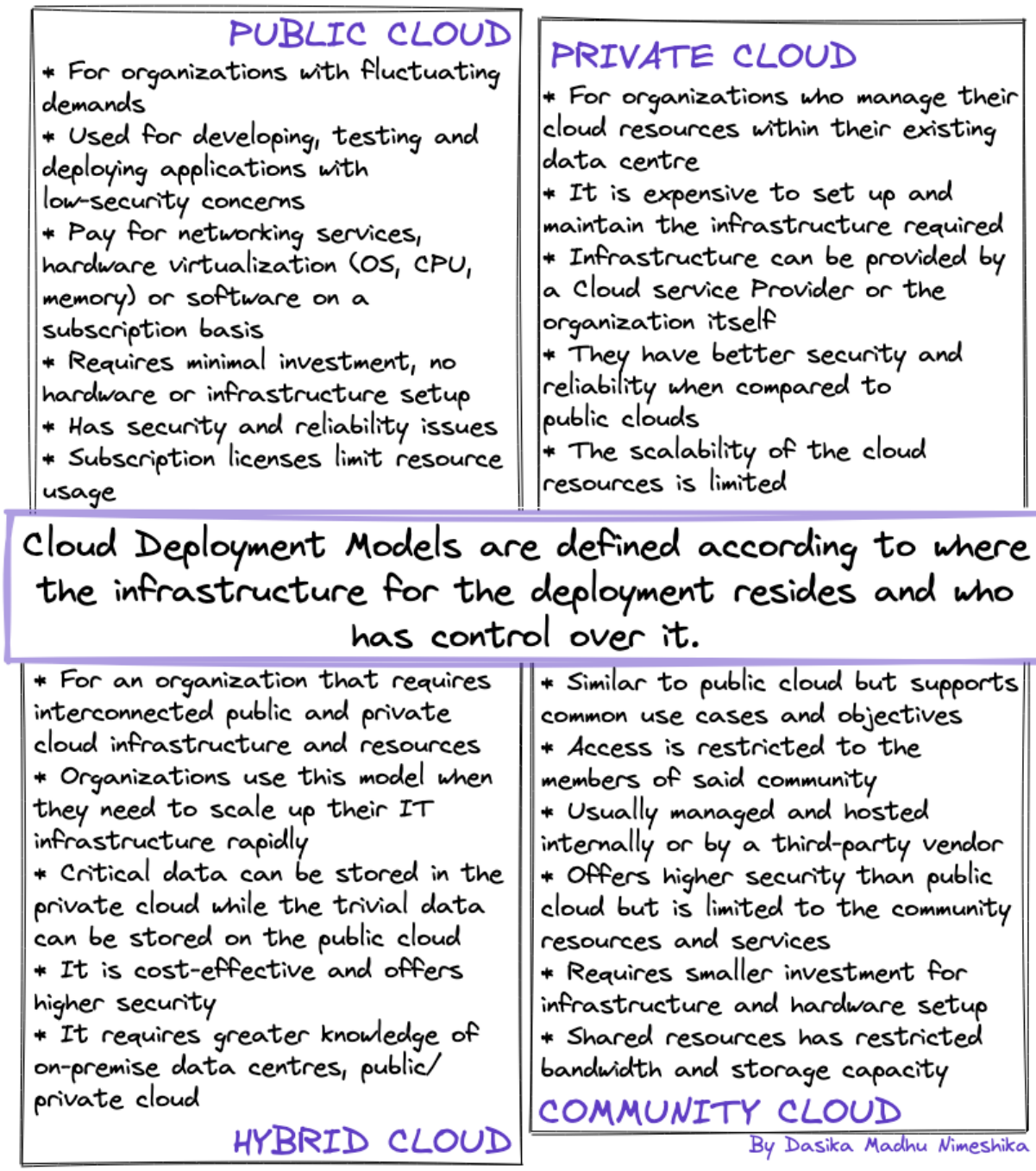


CLOUD DELIVERY/SERVICE MODELS

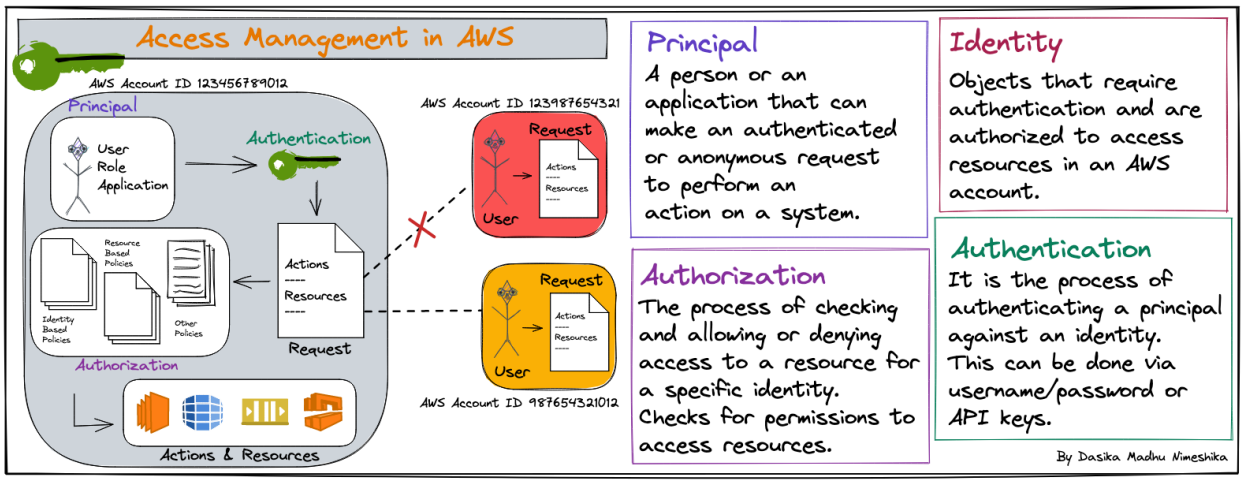
- Cloud Computing provides different models and strategies to meet different needs.
- The purpose of grouping the various cloud services into models is to make them more accessible for different use cases.



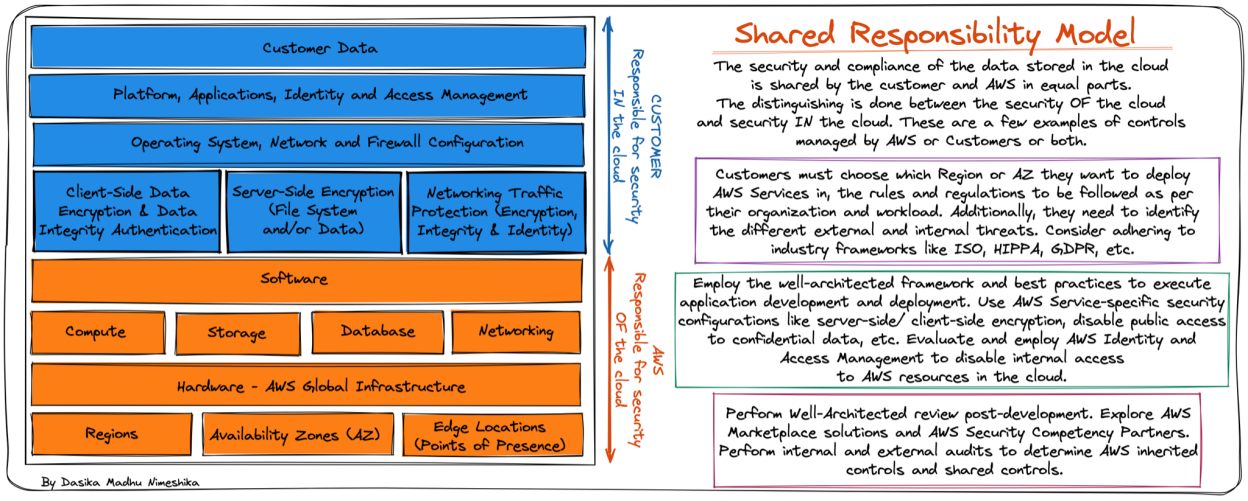
CLOUD DEPLOYMENT MODELS



CLOUD ACCESS MANAGEMENT

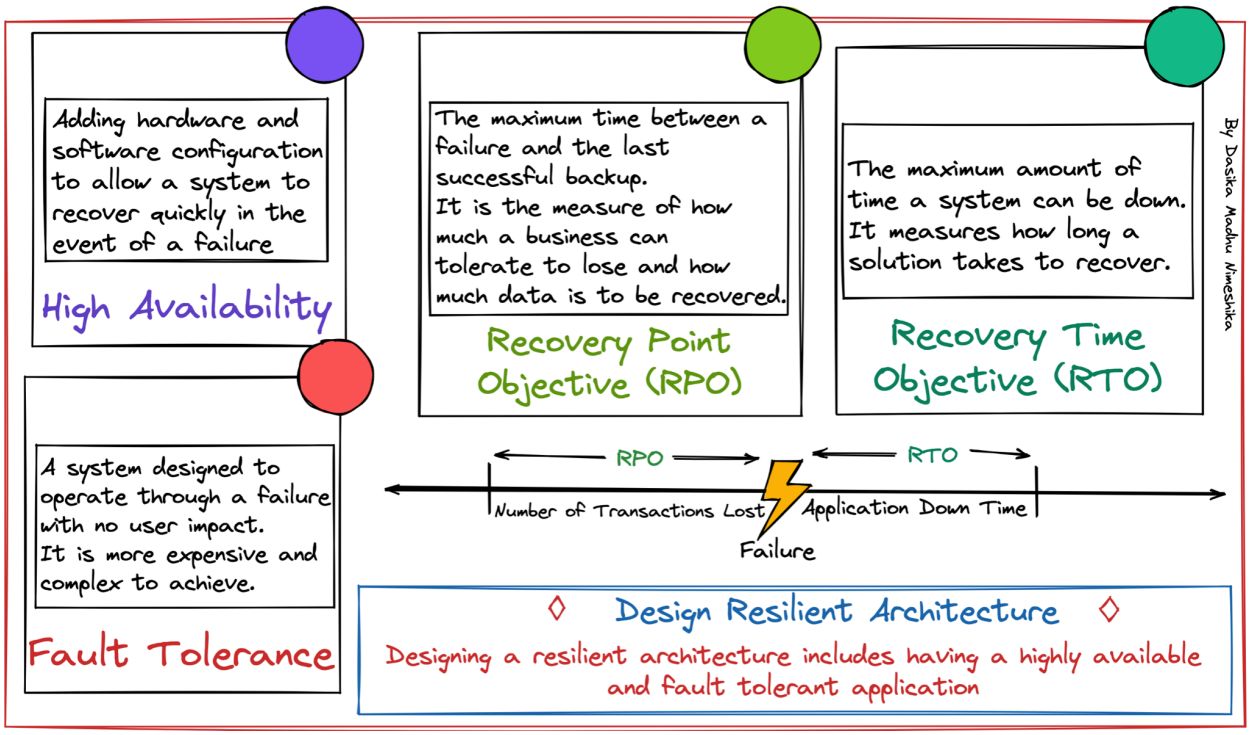


AWS SHARED RESPONSIBILITY MODEL

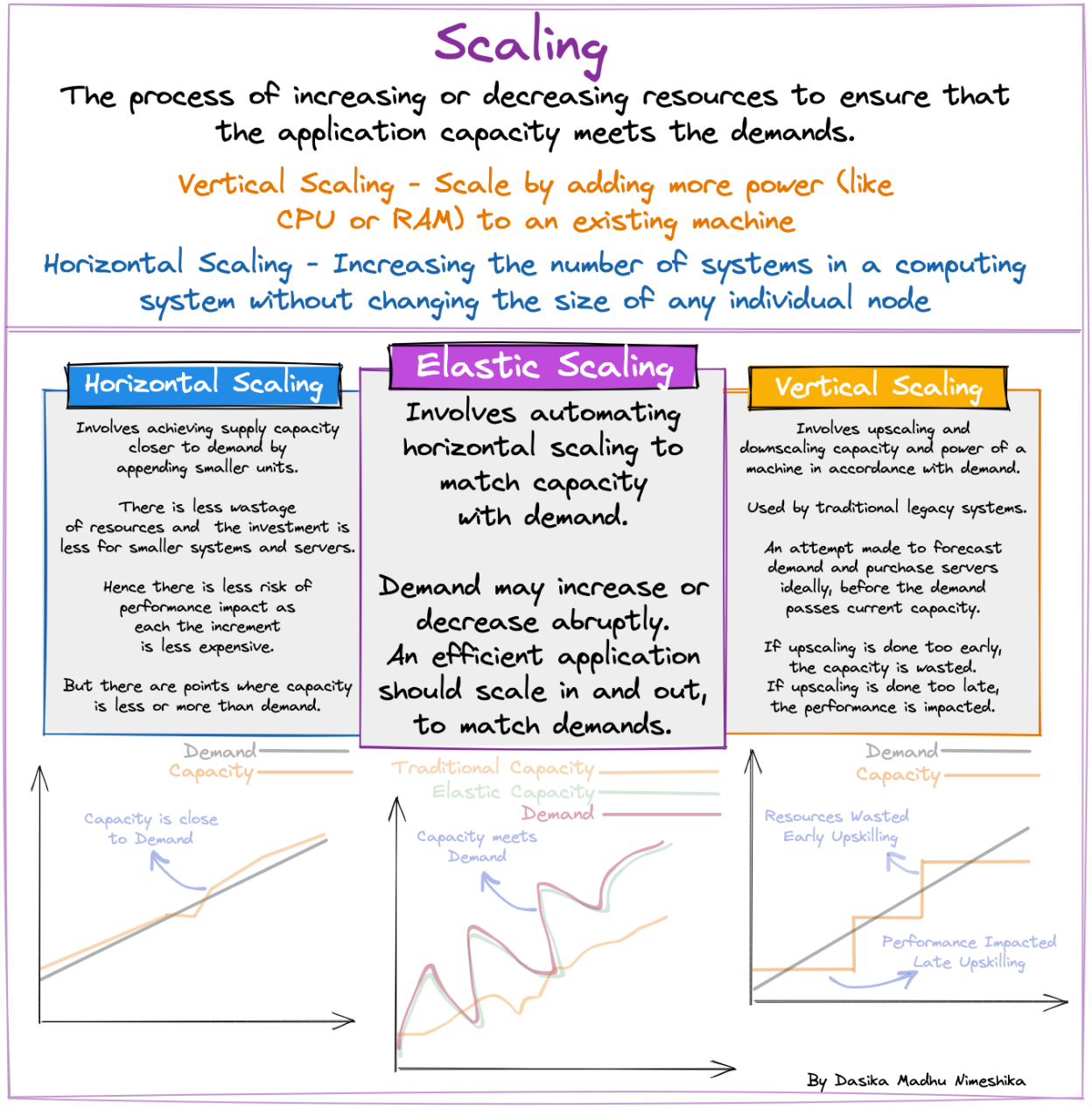


DESIGN RESILIENT ARCHITECTURE

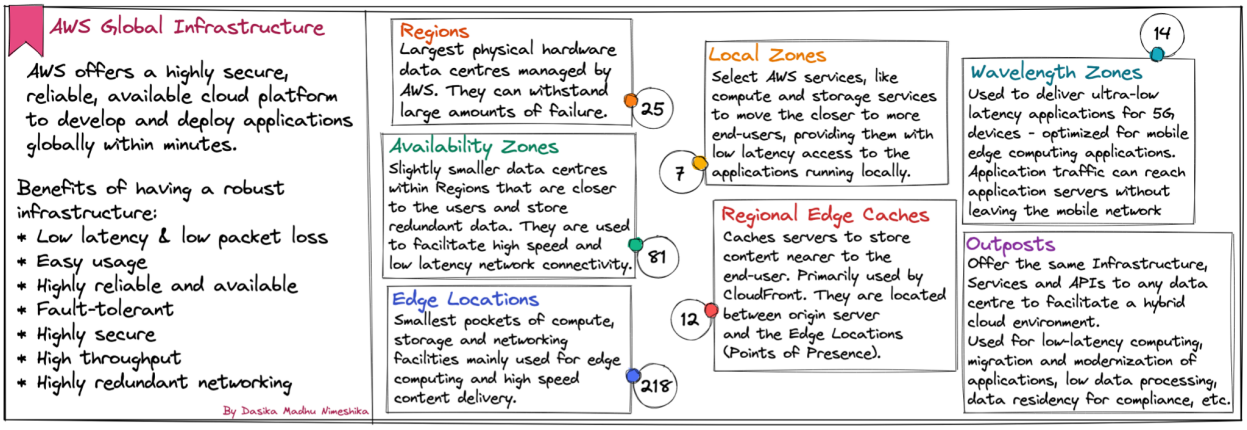
- 'Everything fails all the time'.
- Keep in mind that system failure is inevitable.
- Architect an application with high availability, fault tolerance and a low RPO and RTO to minimize downtime.



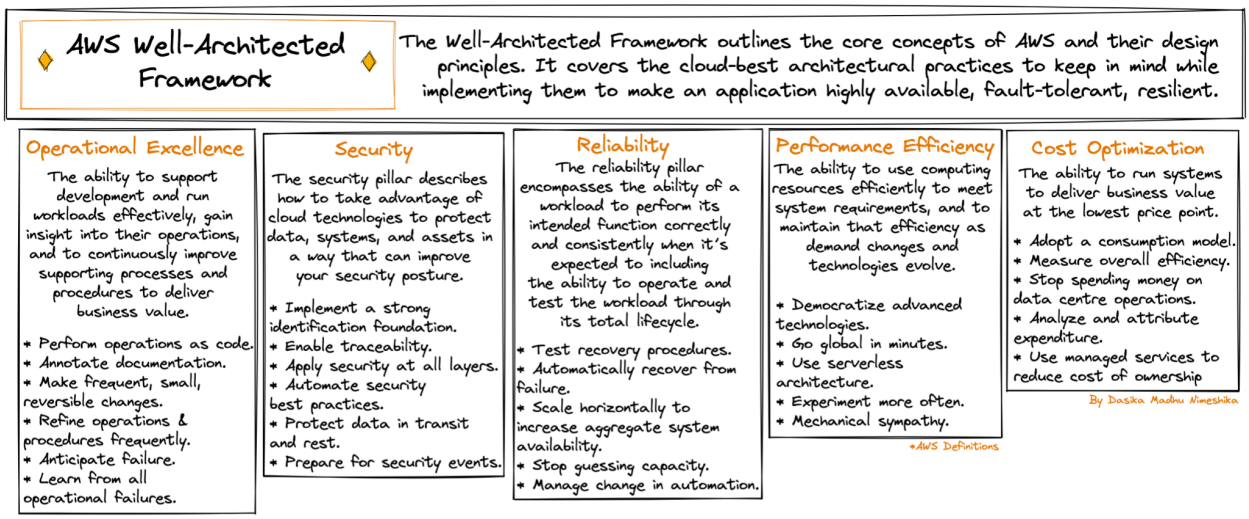
SCALING


Scaling
The process of increasing or decreasing resources to ensure that the application capacity meets the demands.
Vertical Scaling - Scale by adding more power (like CPU or RAM) to an existing machine
Horizontal Scaling - Increasing the number of systems in a computing system without changing the size of any individual node
Horizontal Scaling
Involves achieving supply capacity closer to demand by appending smaller units.
There is less wastage of resources and the investment is less for smaller systems and servers.
Hence there is less risk of performance impact as each the increment is less expensive.
But there are points where capacity is less or more than demand.
Elastic Scaling
Involves automating horizontal scaling to match capacity with demand.
Demand may increase or decrease abruptly. An efficient application should scale in and out, to match demands.
Vertical Scaling
Involves upscaling and downscaling capacity and power of a machine in accordance with demand.
Used by traditional legacy systems.
An attempt made to forecast demand and purchase servers ideally, before the demand passes current capacity.
If upscaling is done too early, the capacity is wasted. If upscaling is done too late, the performance is impacted.
Demand
Capacity
Capacity is close to Demand
Traditional Capacity
Elastic Capacity
Demand
Capacity meets Demand
Demand
Capacity
Resources Wasted Early Upskilling
Performance Impacted Late Upskilling
By Dasika Madhu Nimeshika

GLOBAL INFRASTRUCTURE



AWS WELL-ARCHITECTED



AWS BILLING AND COST MANAGEMENT

Billing and Cost Management in AWS

It is a service that AWS provides to monitor resource usage and manage costs. AWS charges the card set up as the default payment method in the account. Other AWS Services you can use to manage costs include AWS Budget, Cost Explorer and AWS Organization.

AWS Pricing Calculator can help you figure out the approximate charges that may be incurred on the resources you use before you provision them.

Isolated billing information is tagged to every AWS account initially in credit card form, which can be later made into traditional, term-based invoicing being billed only for the resources in your account.

Benefits of using Billing and Cost Management:

* Estimate and plan your AWS costs
* Receive alerts if your costs exceed a threshold that you set
* Assess your biggest investments in AWS resources
* Simplify your accounting if you work with multiple AWS accounts

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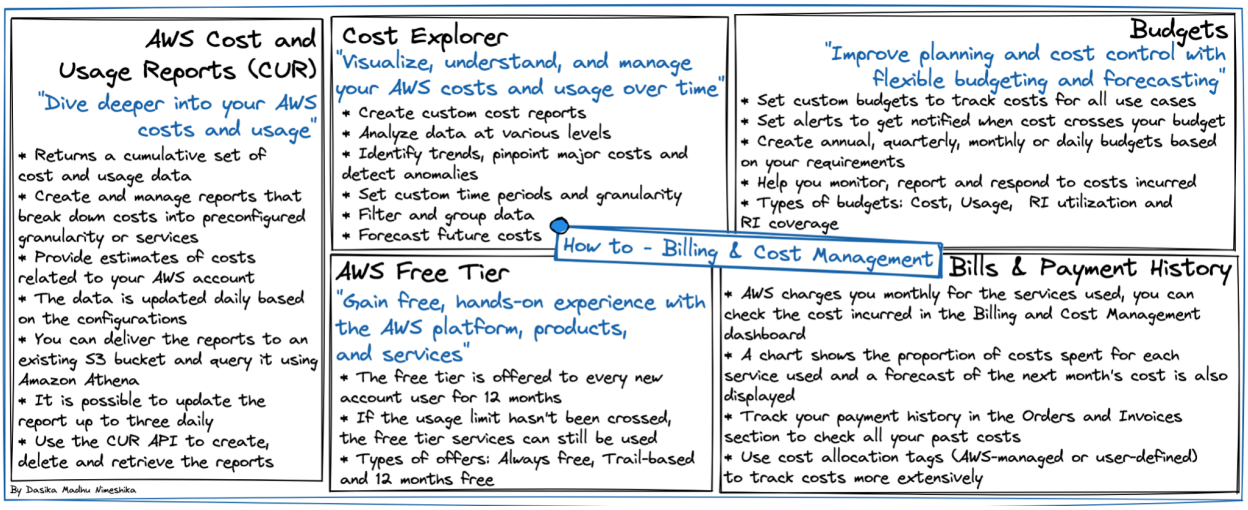
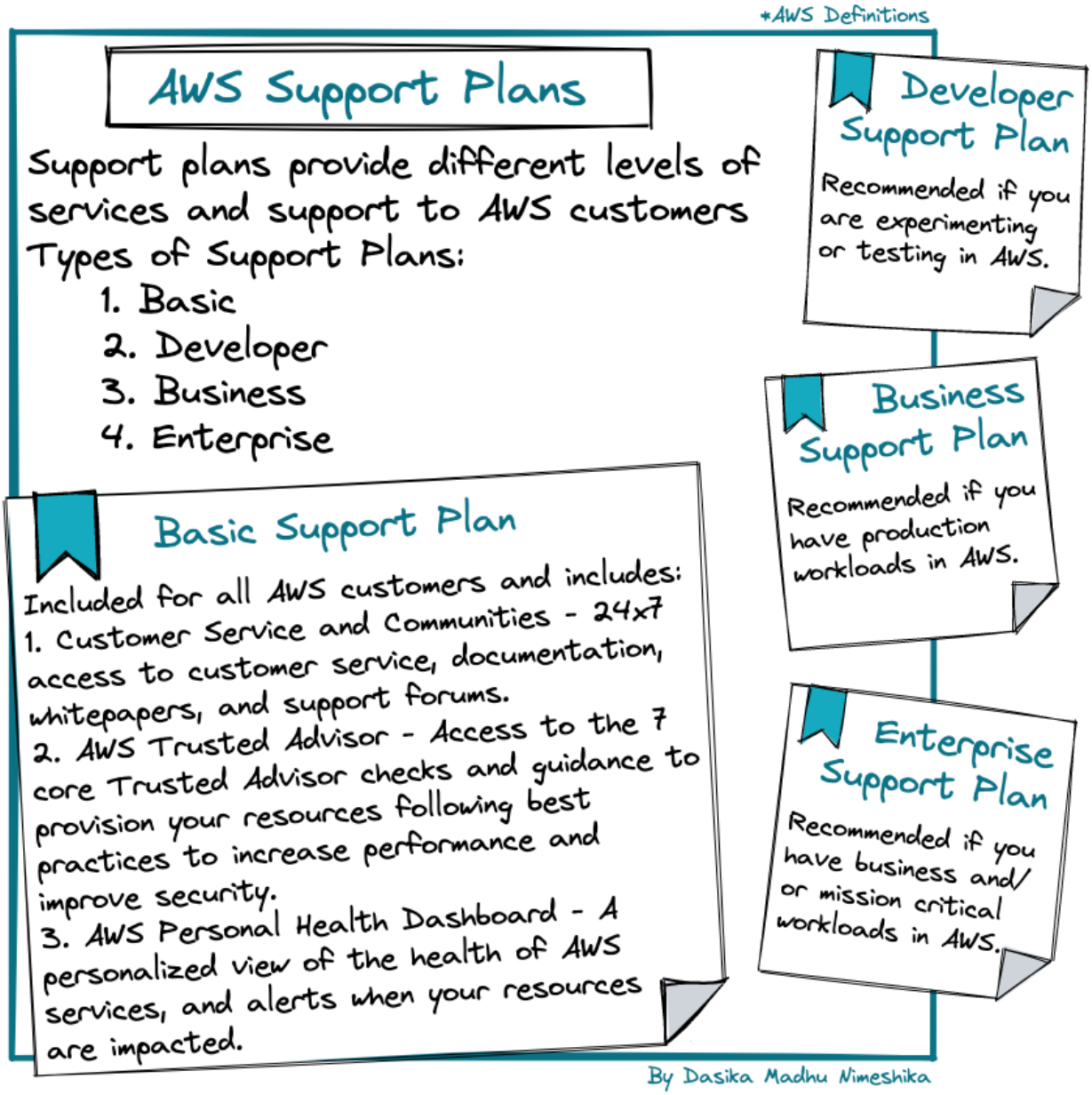


AWS SUPPORT PLANS



AWS ORGANIZATIONS

AWS Organization is a service for managing multiple accounts within a single business. Rather than managing many accounts, with many isolated sets of logins and individual bills, organizations allow consolidation of accounts and bills.

All accounts within an AWS Organization can consolidate bills into a single account -- one bill covering all business usage. Organizations can share bulk discounts and even easily manage accounts and permissions and limit account usage using service control policies.

Role switching is a method of accessing one account from another using only one set of credentials. It is used both within AWS Organisations and between two unconnected accounts.