

# From Dev to Cloud Architect – Keys to Success





# Agenda

## Soft Skills

- ☐ Dev to Senior Dev
- ☐ Role of an Architect?
- ☐ Role of a cloud architect?

## Cloud Architect Technical Skills

- ☐ Lots
- ☐ More
- ☐ Even More



# Dev to Senior Dev

[illegible]

# Dev to Senior Dev Knowledge

[illegible]



# Dev to Senior Dev Responsibility



Dev to  
Senior Dev

Always  
Learning



Ali Spittel    
@ASpittel



The most important skill to have as a programmer is the ability to teach yourself new things effectively and efficiently.

You're going to be constantly growing and picking up new technologies. The ability to do that is more important than any individual tool or technology.

11:00 AM · Feb 28, 2019 · TweetDeck

Dev to  
Senior Dev

Always  
Learning



Ali Spittel 🐞 ✓  
@ASpittel



The most important skill to have as a programmer is the ability to teach yourself new things effectively and efficiently.

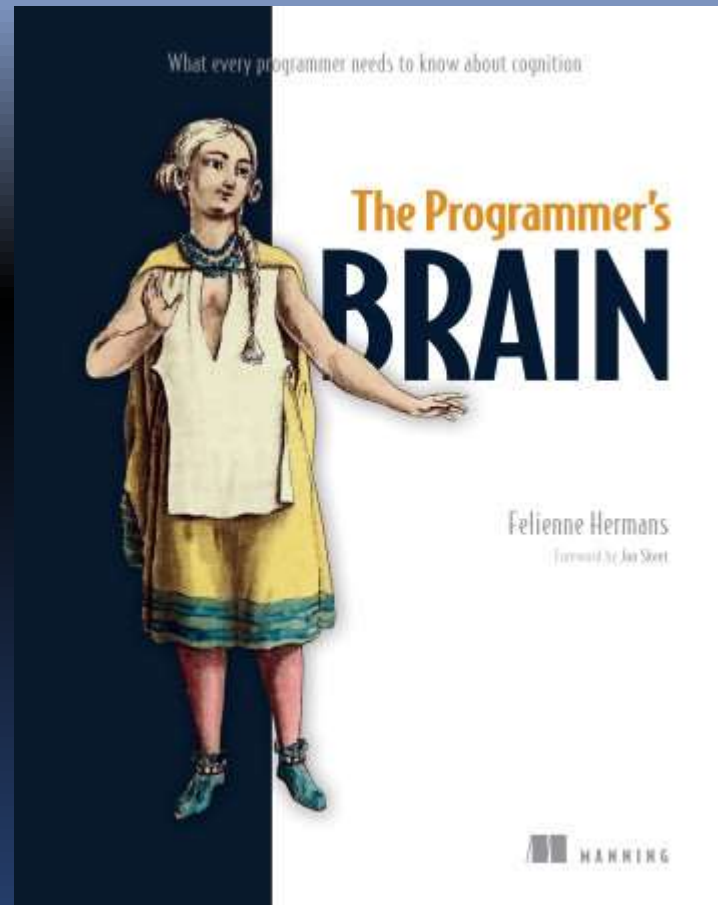
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11:00 AM · Feb 28, 2019 · TweetDeck

- Invest in yourself.
- Learn how you learn best.
- Build an environment for you to constantly learn and grow.

Dev to  
Senior Dev

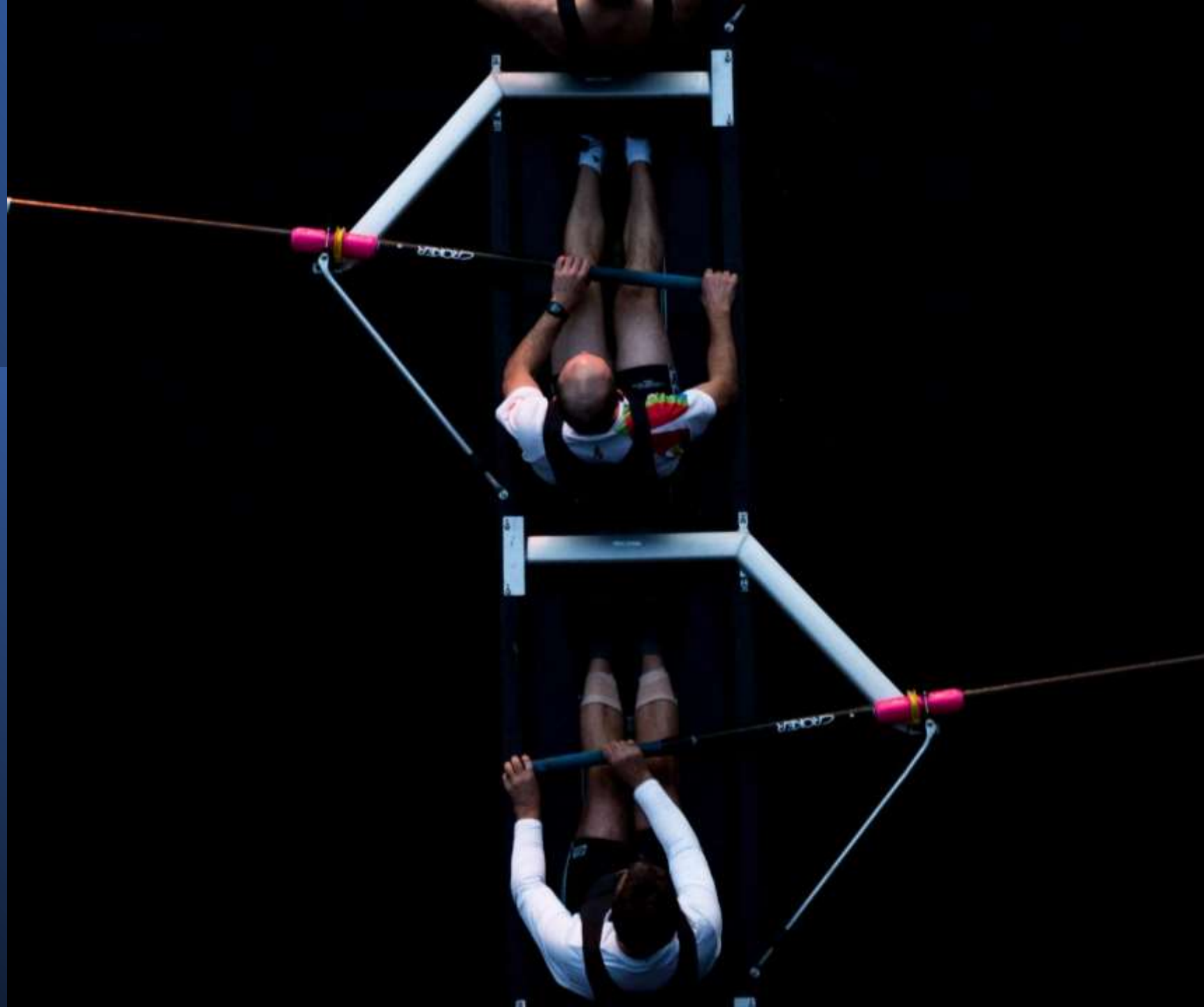
Always  
Learning



*The Programmer's Brain* explores the way your brain, and your teams', works when it's thinking about code. You'll improve your code comprehension by turning confusion into a learning tool, and pick up awesome techniques for reading code and quickly memorizing syntax with easy to use exercises and tricks.

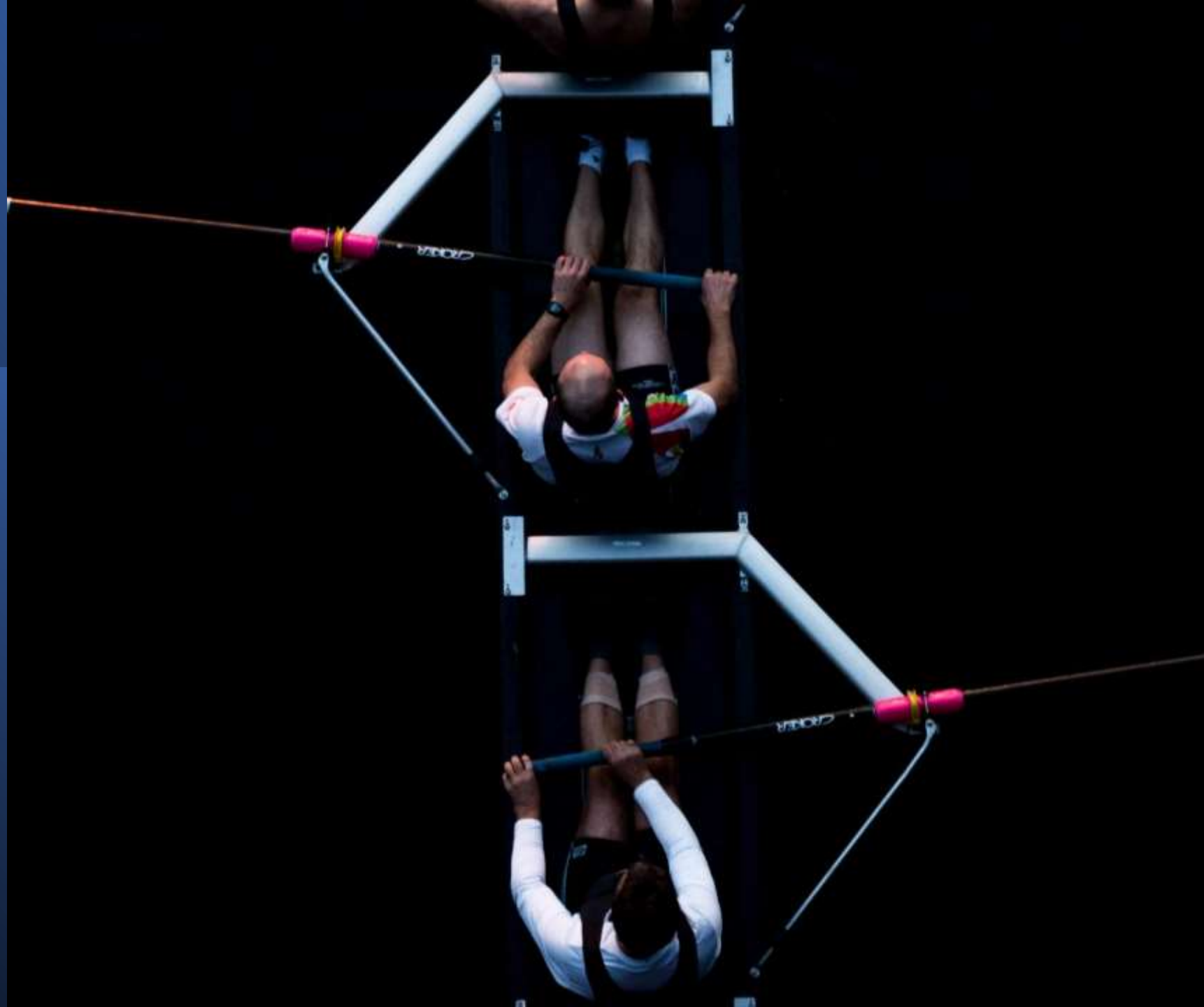


Dev to  
Senior Dev  
Leadership

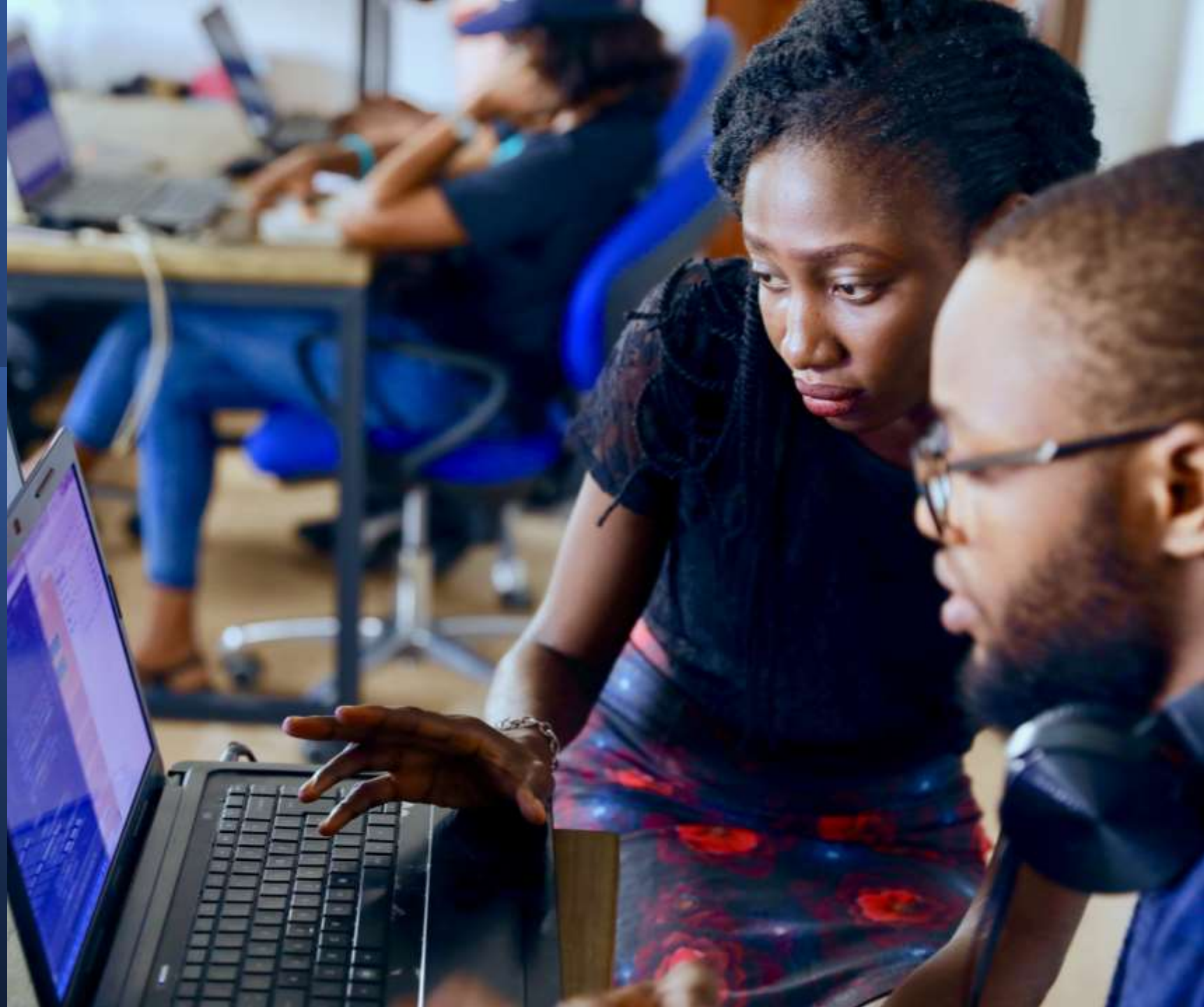


Dev to  
Senior Dev

Leadership  
-Servant Leader



Dev to  
Senior Dev  
Mentoring







LEADERSHIP



KNOWLEDGE



RESPONSIBILITY



MENTORING

# Role of an Architect



Role of an  
Architect

Visionary

# Abstract Business Goals to Reality





Role of an  
Architect

Not Required  
to Know  
Everything



Role of an  
Architect

Not Required  
to Know  
Everything





A serene tropical beach scene at sunset. The sun is low on the horizon, casting a warm, golden glow across the sky and reflecting on the turquoise ocean. Gentle waves with white foam are washing onto a sandy beach in the foreground. In the distance, a small island with palm trees is visible on the left side of the horizon.

**The larger the island of knowledge,  
the longer the shoreline of wonder.  
– Ralph W. Sockman**

**It's okay to not know everything.  
It's impossible anyway.**



Role of an  
Architect

Designing for  
the Future





Role of an  
Architect

Multi-Role  
Capabilities



Role of an  
Architect

Multi-Role  
Capabilities

A fire performer in a suit with a flame pattern is balancing on a barrel and juggling flaming torches. The performer is wearing a red cap and is looking up at the torches. The background shows a brick building and some trees. In the foreground, a person is taking a photo with a smartphone. A sign on the barrel says "FIRESHOW".

**Business Analyst**  
**Project Manager**  
**Product Manager**  
**Developer**





Vision → Explore and Define the Future

Always Learning

Motivational & Inspirational → Help Others

Confident & Committed → Find Solutions

# Role of a Cloud Architect





# Role of a Cloud Architect

## Cost Management





Role of a  
Cloud  
Architect

Vendor  
Management



Role of a  
Cloud  
Architect

Documentation





# Role of a Cloud Architect Marketing





# Role of a Cloud Architect

Sales



Role of a  
Cloud  
Architect

Company  
Politics





Role of a  
Cloud  
Architect

Critical  
Thinking





# Role of a Cloud Architect

## Security



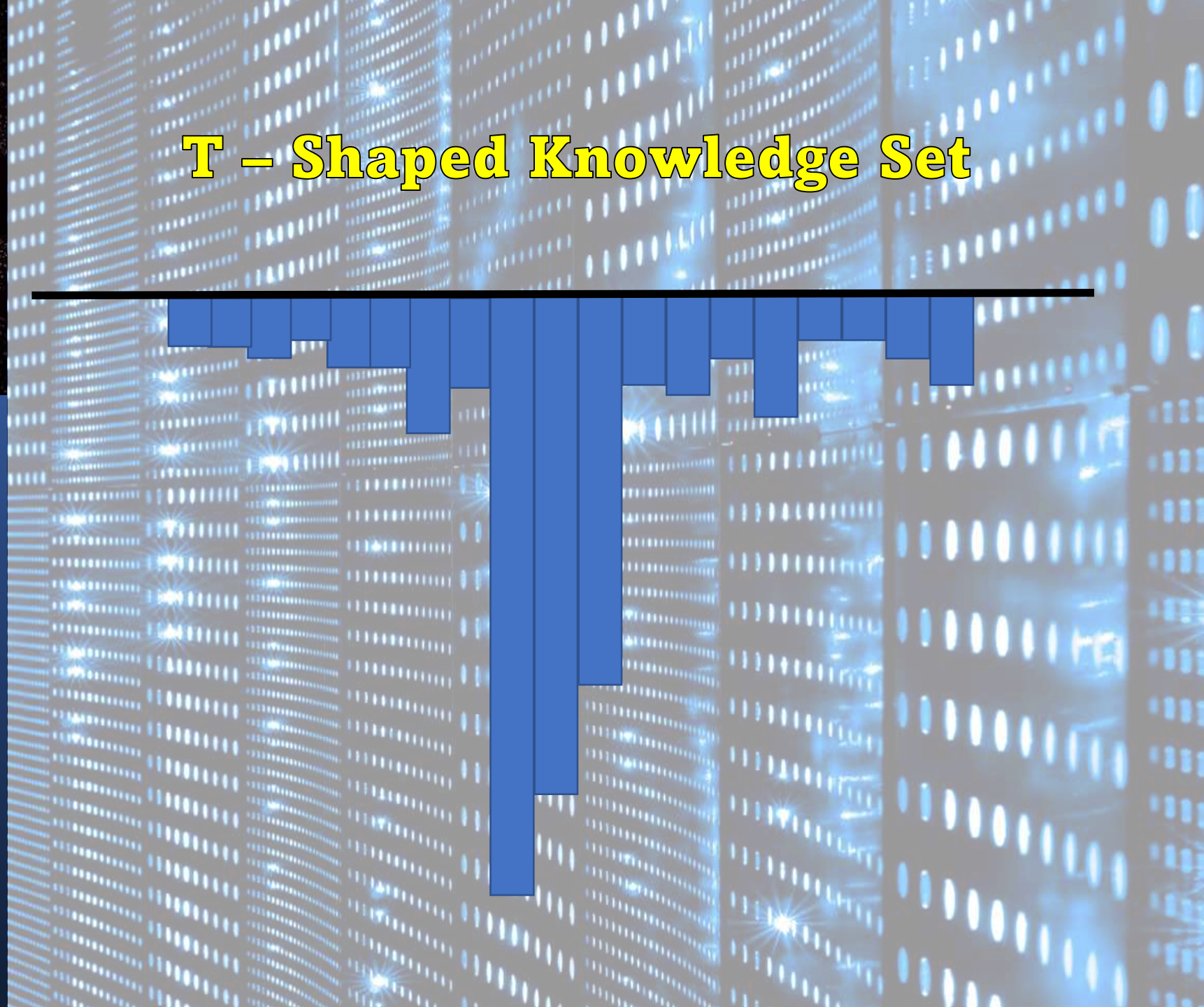




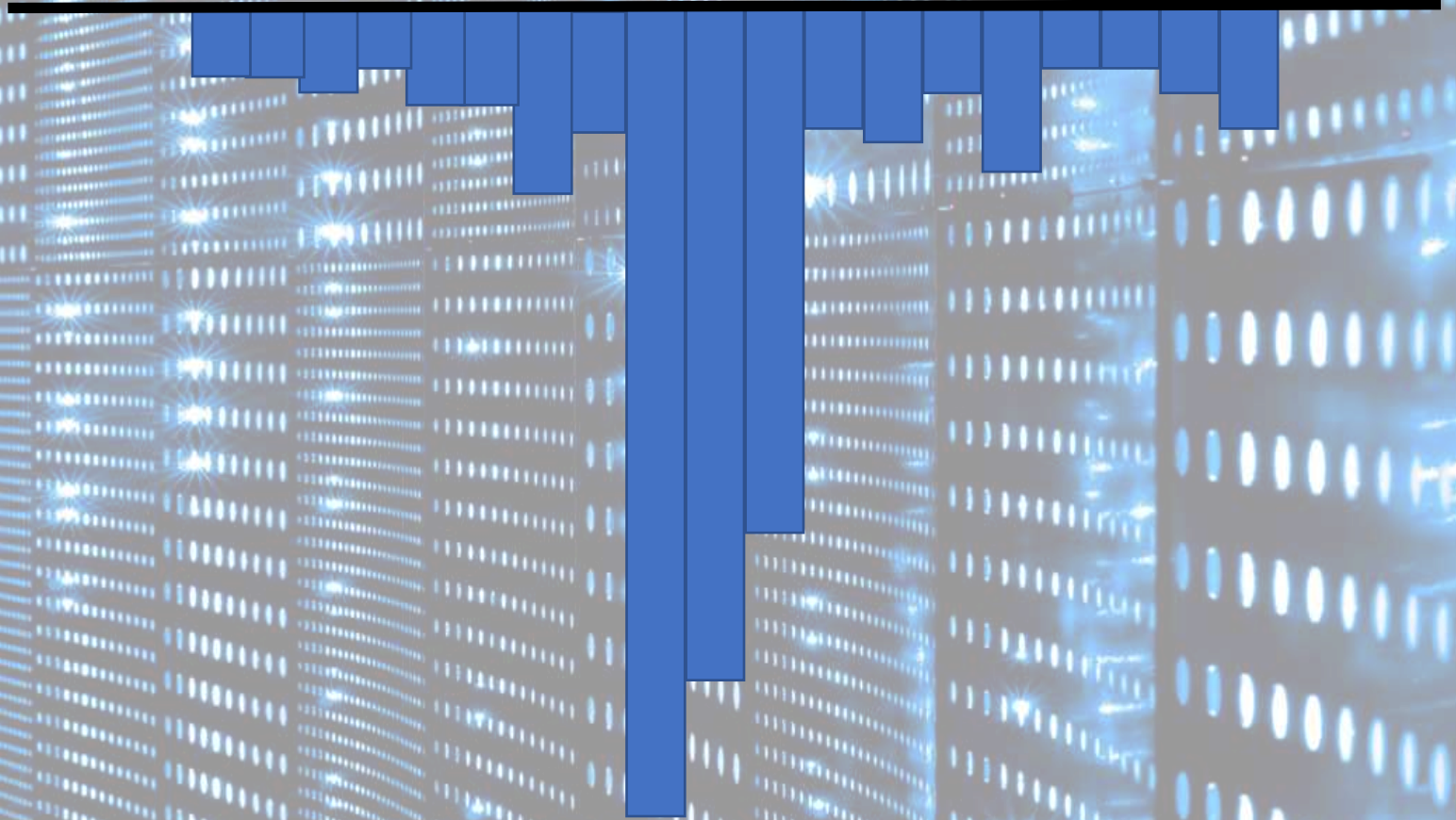
Role of a  
Cloud  
Architect

Technical Skills





## T – Shaped Knowledge Set



Role of a  
Cloud  
Architect

Technical Skills  
- Breadth not  
Depth





Role of a  
Cloud  
Architect

Choosing  
Cloud Platform







Role of a  
Cloud  
Architect

Choosing  
Cloud Platform

**Azure**  
**Amazon Web Services**  
**Google Cloud Platform**  
**IBM Watson**  
**Oracle Cloud Infrastructure**  
**Alibaba Cloud**  
**VMware by Dell**







# Role of a Cloud Architect

World-Wide  
Options





## Role of a Cloud Architect

## Technical Skills Networking

A network is one of the foundational components of any cloud solution.

vLAN

Subnets

CIDR

Security Groups

Firewall

IDS/IPS

Virtual Appliance

Load Balancers

PrivateLink

OSI Model

Route Table

vNet == Virtual Network

VPC == Virtual Private Cloud

vLAN == Virtual Local Area Network

CIDR == Classless Inter-Domain Routing

IDS == Intrusion Detection System

IPS == Intrusion Prevention System

OSI == Open Systems Interconnection Model

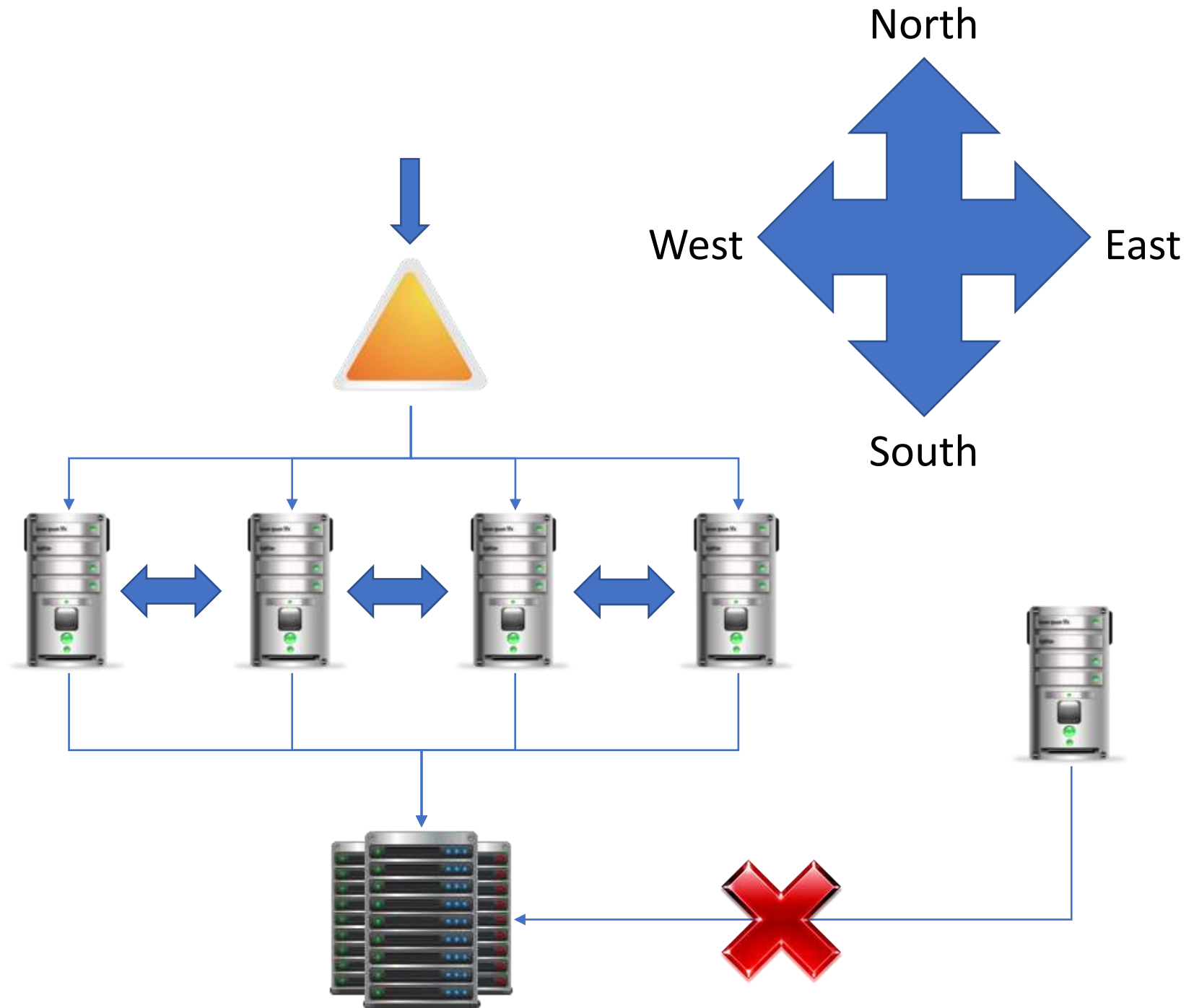
Data ingress & egress





Role of a  
Cloud  
Architect

Technical Skills  
Networking





## Role of a Cloud Architect

## Technical Skills Computing

### VMs & EC2

#### Serverless

- AWS Lambda
- Azure Functions

VM == Virtual Machine

EC2 == Elastic Cloud Computing

#### Operating Systems

- Windows
- Linux





## Role of a Cloud Architect

## Technical Skills Containerization

### Kubernetes

- AKS
- EKS

### Registries

- ACR
- ECR

### Container Services

- ACS
- ECS

AKS == Azure Kubernetes Service

EKS == AWS Elastic Kubernetes Service

ACR == Azure Container Registry

ECR == AWS Elastic Container Registry

ACS == Azure Container Service

ECS == AWS Elastic Container Service



## Role of a Cloud Architect

## Technical Skills Database

### Relational

- SQL Server
- Aurora

### NoSQL

- CosmosDB
- DynamoDB
- DocumentDB

### Analytics

- Azure Synapse
- AWS Redshift

### Geo-Redundancy

RPO / RTO

Consistency Levels

ACID / ACID 2.0

CAP Theorem

RPO == Recovery Point Objective

RTO == Recovery Time Objective

ACID == Atomicity, Consistency, Isolation, Durability

---

ACID 2.0 == Associative, Commutative, Idempotent, Distributed

CAP == Consistency, Availability, (network) Partitioning

“ACID 2.0” – Pat Helland

Michael Perry – [immutablearchitecture.com](http://immutablearchitecture.com)





## Role of a Cloud Architect

## Technical Skills Storage

### Storage Accounts

#### AWS

- S3 Buckets
- EBS
- EFS

S3 == Simple Storage Solution

EBS == Elastic Block Storage

EFS == Elastic File Storage

#### Azure

- Blob
- File
- Table



## Role of a Cloud Architect

Technical Skills  
Security

### Identity

- IAM
- RBAC

### Network

- Penetration Testing
- DDoS
- Bastion

IAM == Identity & Access Management

RBAC == Role Based Access Control

DDoS == Distributed Denial of Service





## Role of a Cloud Architect

## Technical Skills Messaging

Message Bus

RabbitMQ

ActiveMQ

Azure

Service Bus

Event Hubs

Event Grid

Relay

AWS

MQ

SQS

SNS

AWS MQ == AWS Message Queue

AWS SQS == AWS Simple Queue Service

AWS SNS == AWS Simple Notification Service



## Role of a Cloud Architect

## Technical Skills Data Centers

### Regional Capabilities

#### Azure

Several regions in the US

Up to 3 Availability Zones per Region

#### AWS

4 regions in the US

Up to 6 Availability Zones per Region

#### Paired Regions

- Infrastructure updates
- Data residency





## Role of a Cloud Architect

## Technical Skills Disaster Recovery

### Geo-Redundant Availability

- Hot/Hot
- Hot/Warm
- Hot/Cold

### Geo-Redundant Data/Storage

Code deployments to multiple locations

Workbooks / Runbooks

TEST your DR solutions !



## Role of a Cloud Architect

Technical Skills  
DevOps

### Azure

- DevOps

### AWS

- Code Build
- Code Deploy
- Code Pipeline

### Deployment Options

- Swap
- Rolling Updates
- Blue/Green
- Canary

### Consider “Infrastructure as Code”

- Terraform
- Pulumi
- ARM Templates
- CloudFormation



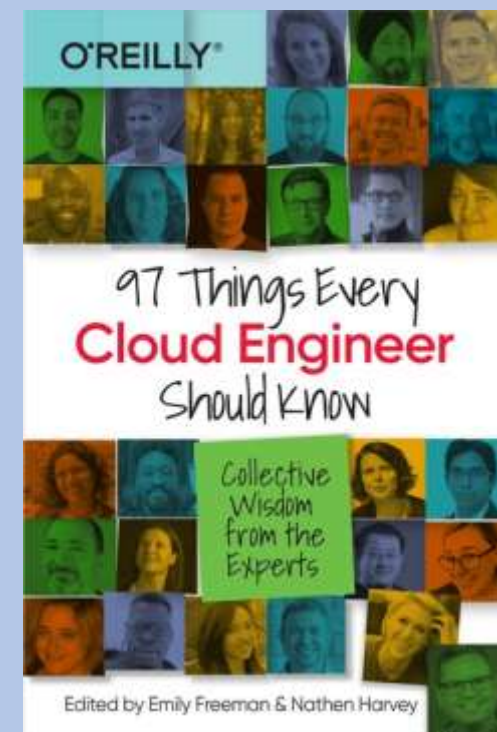


## Role of a Cloud Architect

## Technical Skills Design

Everything in architecture is about Trade-Offs  
– Neal Ford & Mark Richards

[developertoarchitect.com](http://developertoarchitect.com)  
[nealford.com/katas/list.html](http://nealford.com/katas/list.html)  
O'Reilly Learning



[amazon.com/Things-Every-Cloud-Engineer-Should/dp/1492076732](https://amazon.com/Things-Every-Cloud-Engineer-Should/dp/1492076732)



Role of a  
Cloud  
Architect

You Got This !





Role of a  
Cloud  
Architect

Who am I ?

**SEAN WHITESELL**

**CLOUD ARCHITECT AT TOKENEX**

**MICROSOFT MVP**

**TULSA .NET USER GROUP LEADER**

**GitHub: seanw122/presentations**

**Web: seanwhitesell.com**

**Twitch: codewithsean**

**Twitter: codewithseanw**

**THANK YOU !**

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