

AWS CERTIFIED

CLOUD

PRACTITIONER



Cloud Concepts



AMBER ISRAELSEN

Developer | Technical Trainer

Course Outline

Course
Introduction

Cloud Concepts

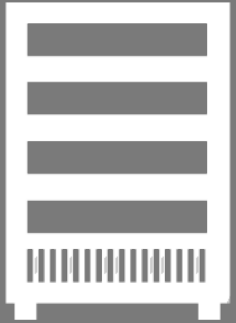
Security and
Compliance

Cloud
Technology and
Services

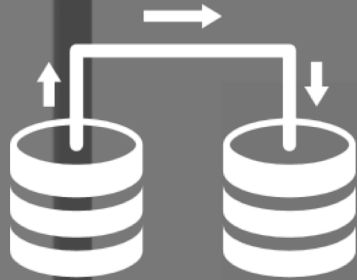
Billing, Pricing
and Support

Preparing for
the Exam





COMPUTE



DATABASE



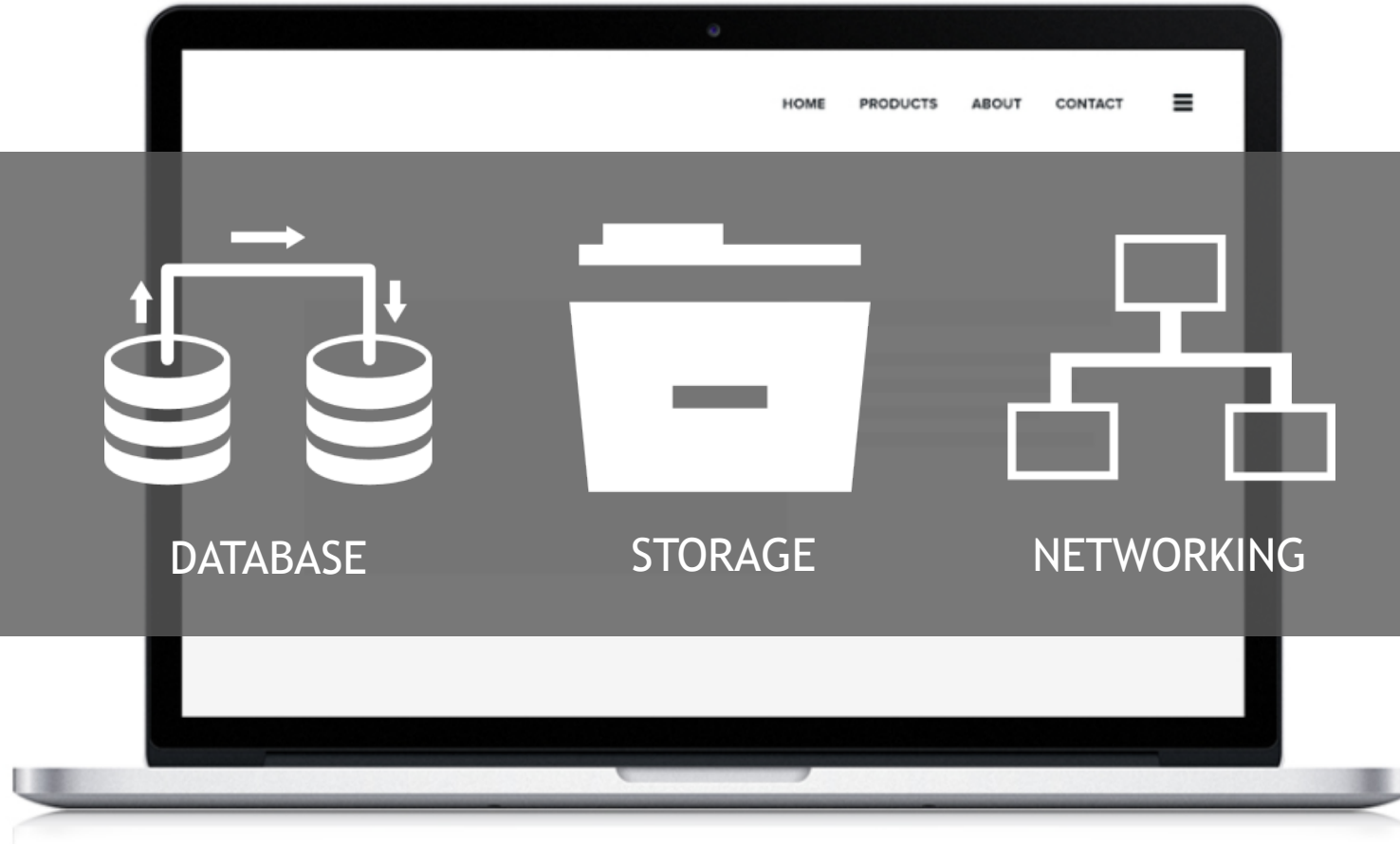
STORAGE



NETWORKING



SECURITY





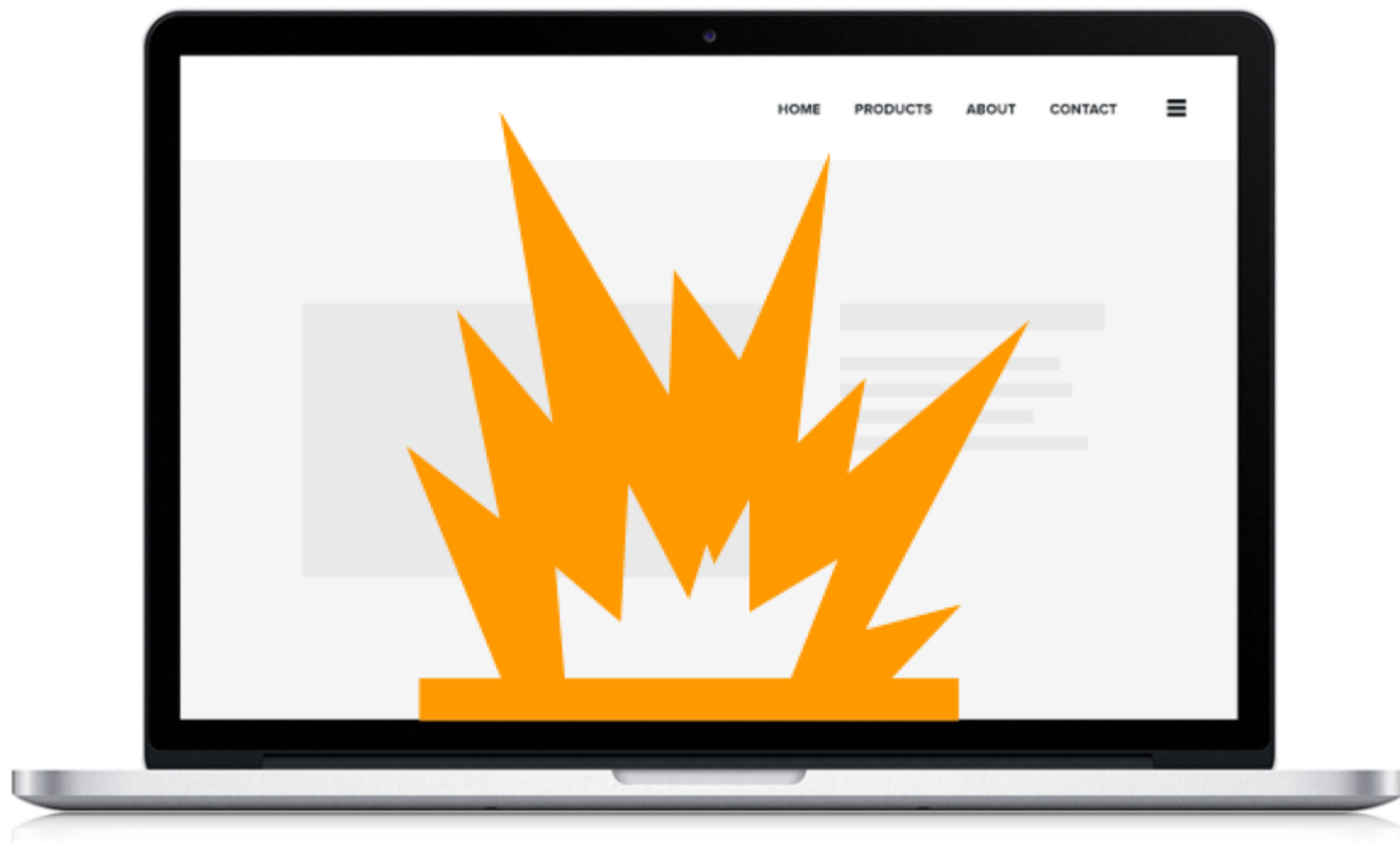




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border: 1px solid rgba(255, 255, 255, .5);
color: #fff;
}

/*
.btHardRoundedButtons any(select, input,
.btSoftRoundedButtons any(select, input,
/* Form elements */
select,
input {
  font-family: 'GreycliffCF-Regular', Arial, Helvetica, sans-serif;
  font-weight: normal;
  font-style: normal;
}
input:not([type='checkbox']):not([type='radio']),
button {
  -webkit-appearance: none;
}
input:not([type='checkbox']):not([type='radio']),
textarea,
select {
  outline: none;
  font: inherit;
  width: 100%;
  background: transparent;
  line-height: 1;
  font-family: 'GreycliffCF-Regular', Arial, Helvetica, sans-serif;
  font-weight: normal;
  font-style: normal;
  font-size: .8em;
  width: 100%;
  display: block;
  padding: .8em;
  background: transparent;
}
.btTextRight input:not([type='checkbox']):not([type='radio']),
.btTextRight textarea,
.btTextRight select {
  text-align: right;
}
input:not([type='checkbox']):not([type='radio']),
select {
  height: 3.2em;
}
.btHardRoundedButtons input:not([type='checkbox']):not([type='radio']),
.btHardRoundedButtons a.select2-choice {
  border-radius: 50px;
}
.btSoftRoundedButtons input:not([type='checkbox']):not([type='radio']),
.btSoftRoundedButtons a.select2-choice {
  border-radius: 30px;
}
.btHardRoundedButtons textarea,
.btHardRoundedButtons select {
```





The Solution

IN THE PAST

Do a better job estimating demand

Invest in more infrastructure

Hire more people

NOW

Move to the cloud!



All the
STUFF AND THINGS
required to run my
website



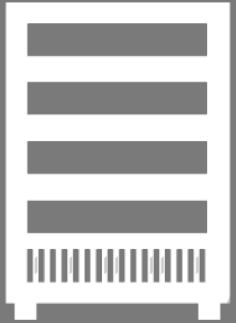




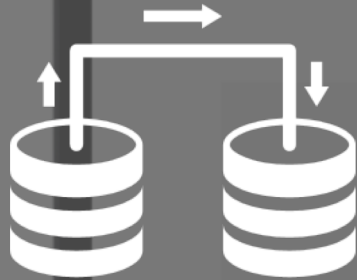
Pay for what you use



Use it when you need it
Pay for what you use



COMPUTE



DATABASE



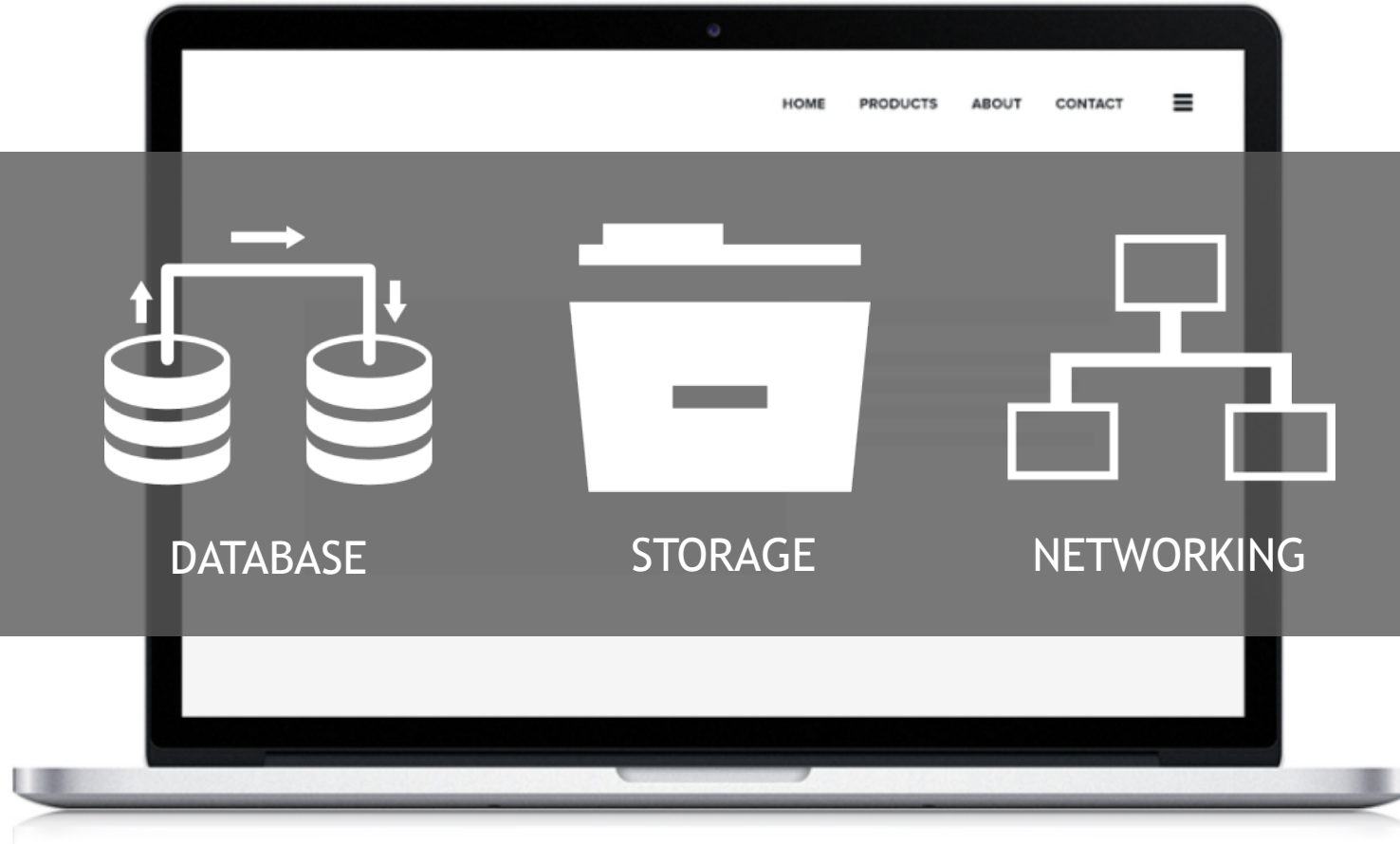
STORAGE



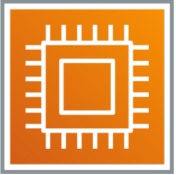
NETWORKING



SECURITY



Foundational Services



COMPUTE: Elastic Compute Cloud (EC2)



DATABASE: Relational Database Service (RDS) and DynamoDB



STORAGE: Simple Storage Service (S3)



NETWORKING: Virtual Private Cloud (VPC)



SECURITY: Identity and Access Management (IAM)

Benefits (Part 1)

TERM	DESCRIPTION	EXAMPLE
Elasticity	The ability to adapt to workload changes (usually dynamic, short-term)	Amazon.com handling a huge spike in traffic on Prime Day
Scalability	The ability to handle increased workloads by adding resources (usually more static, long-term)	Scale up a database because the size has grown over time
High availability	The ability to continue functioning, even if some components fail	When a power outage causes one data center to go down, traffic is routed to another
Reliability	The ability to function consistently and correctly when expected	99.99% uptime for EC2 instances during a given month
Agility	The ability to rapidly develop, test and launch applications to deliver business value	Launch a new business application in days rather than months



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Benefits (Part 2)

TERM	DESCRIPTION	EXAMPLE
Global reach	The ability to get closer to your customers through a global infrastructure	26 geographic regions around the world
Pay-as-you-go pricing	Only pay for what you use, and only when you need it	An EC2 instance only used for 2 hours; only pay for 2 hours
Economies of scale	Because of their size, AWS can purchase things more cheaply than an individual organization can	Amazon purchases servers at a fraction of the cost that you could, and pass the savings on to you

Benefits (Part 2)

TERM	DESCRIPTION	EXAMPLE
Global reach	The ability to get closer to your customers through a global infrastructure	25 Availability Zones around the world
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Economics of AWS

Total cost of ownership

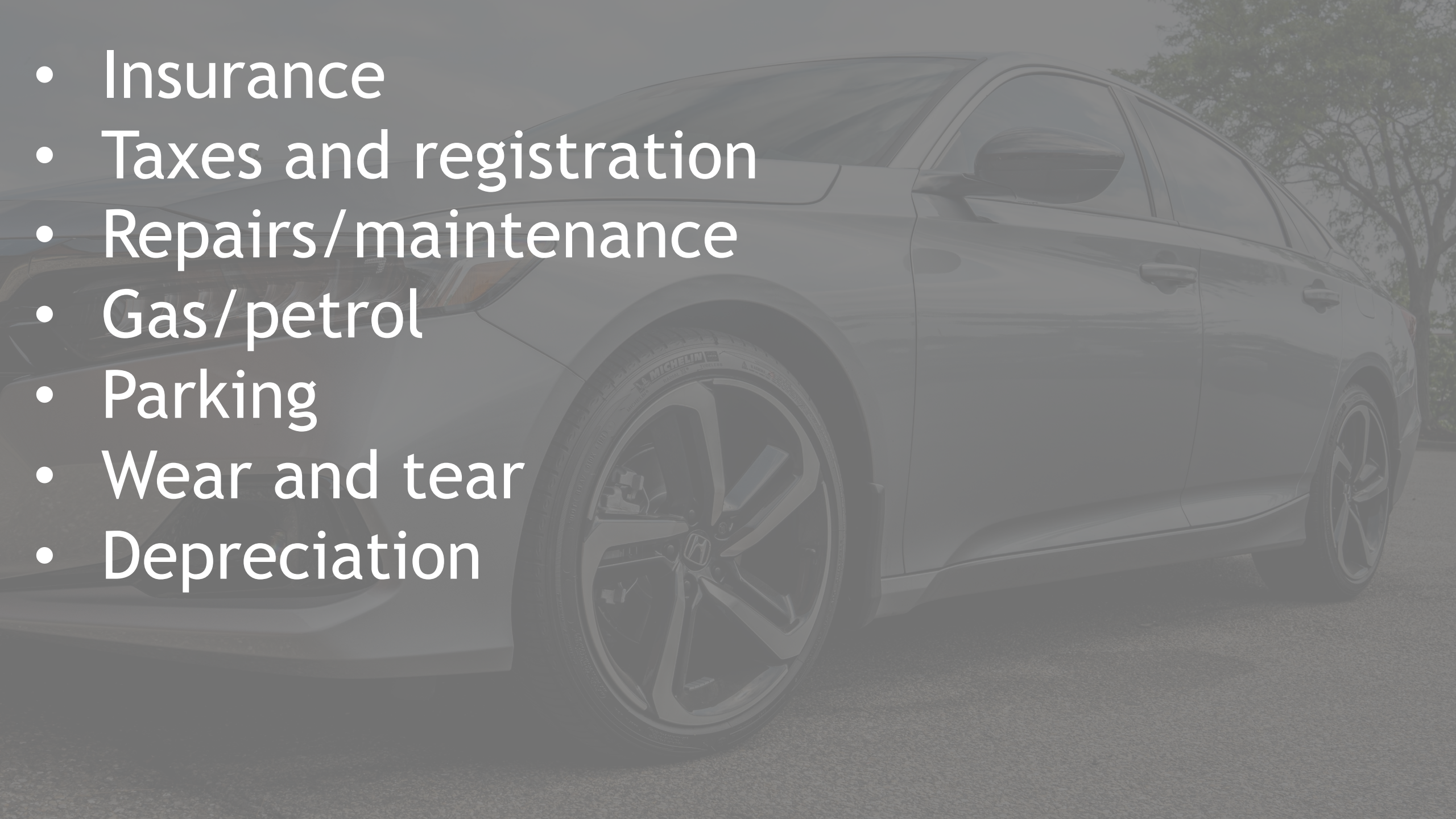
Capital expenses

Operational expenses

Software licensing costs



- Insurance
- Taxes and registration
- Repairs/maintenance
- Gas/petrol
- Parking
- Wear and tear
- Depreciation



TOTAL COST OF OWNERSHIP (TCO)

Up-front cost + cost to operate

CAPITAL EXPENSE
("CapEx")

OPERATING EXPENSE
("OpEx")

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Ways to Reduce Costs in AWS

Right-sized infrastructure

Automation

Compliance scope

Managed services

Cloud Architecture Design Principles

Design for failure

“Everything
fails all the
time.”

WERNER VOGELS
AWS Chief Technology Officer



Cloud Architecture Design Principles

Design for failure

Decouple components

Photo Sharing Example

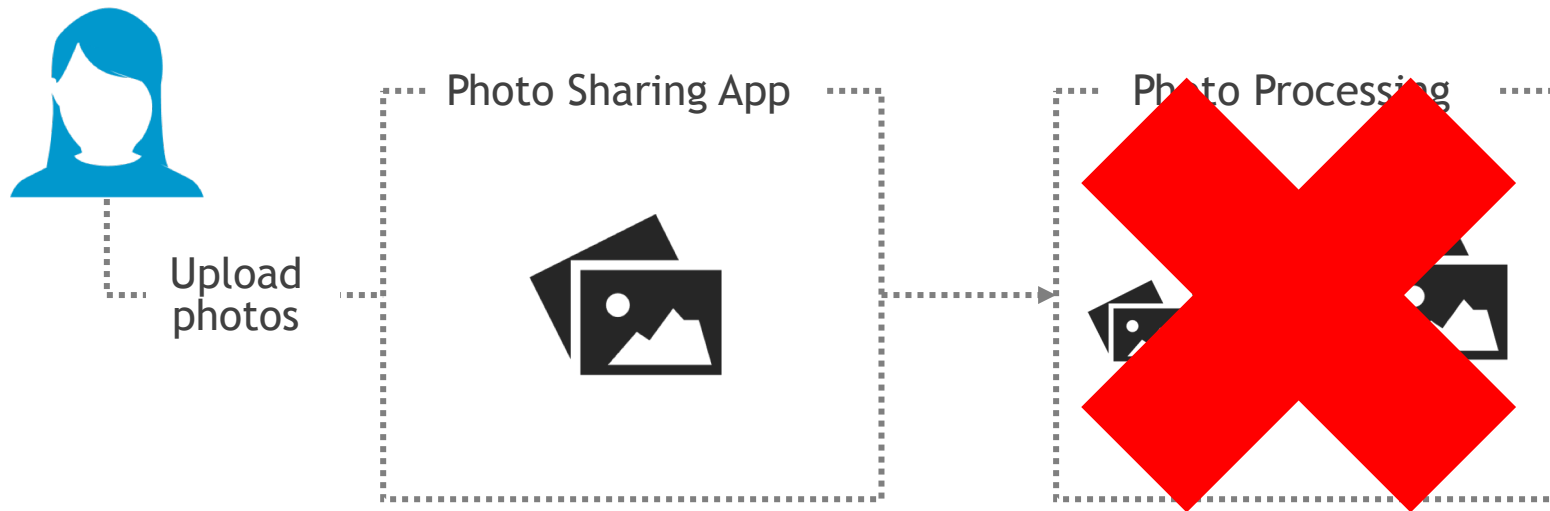


Photo Sharing Example



Upload
photos

Photo Sharing App



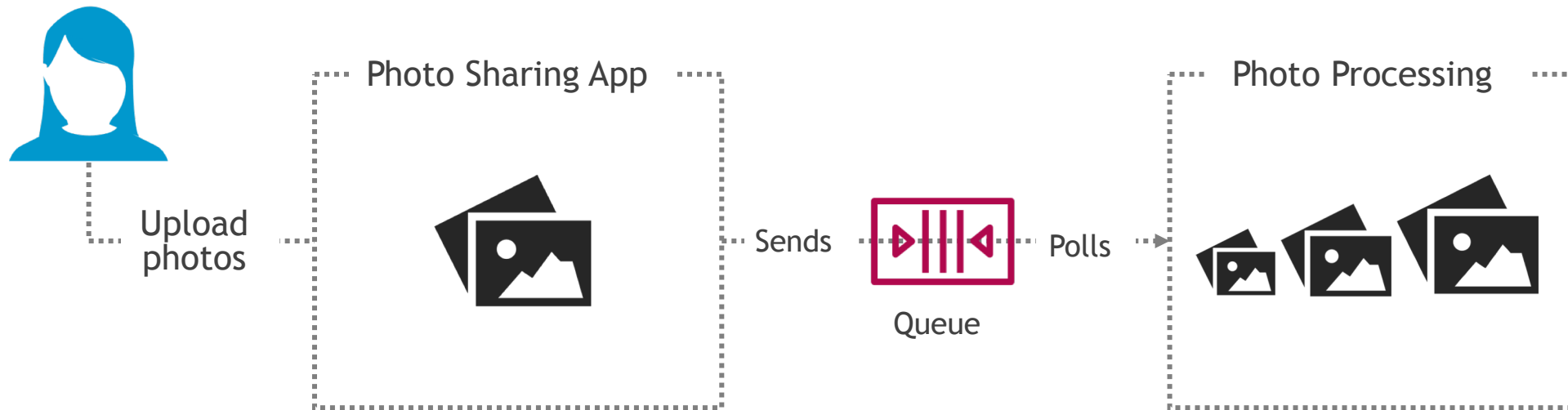
Photo Processing



Tightly coupled

Loose Coupling

Microservices (vs. Monolithic)



Cloud Architecture Design Principles

Design for failure

Decouple components

Implement elasticity

Cloud Architecture Design Principles

Design for failure

Decouple components

Implement elasticity

Think parallel

Think Parallel



1 SERVER
24 HOURS



24 SERVERS
1 HOUR

Cloud Adoption Framework (CAF)

Leverages AWS experience and best practices to transform and accelerate business outcomes by using AWS

Get Report

[Report](#) | [Heat Map](#) | **Score** | [Radar](#)

Assessment Scores

Business Section



Strategy management - 2

Portfolio management - 2

Innovation management - 2

Product management - 2

Strategic partnership - 3

Data monetization - 4

Business insights - 2

Data science - 3

People Section



Culture evolution - 2

Transformational leadership - 4

Cloud fluency - 3

Workforce transformation - 1

Change acceleration - 2

Organization design - 2

Organizational alignment - 3

Governance Section



Program and project management - 2

Platform Section



Platform architecture - 2

Get Your Full Report Now

* First Name

* Last Name

* Phone Number

* Email

* Job Title

* Company

* Company Size

* Industry

Cloud Adoption Framework (CAF)

Six pillars

- Business
- People
- Governance
- Platform
- Security
- Operations

Important Points to Remember

BENEFITS

- Global reach: data centers around the world
- High availability: continue functioning even when one component (server, data center, etc.) goes down
- Cost savings: reduces up-front costs (“CapEx”) and ongoing costs (“OpEx”)
 - Only pay for what you use
 - Right-sizing infrastructure means you don’t have to “guess” capacity
 - Managed services reduce your IT overhead/spend

DESIGN PRINCIPLES

- Design for failure: assume things will fail, and architect for that
- Loose coupling: reduces the dependencies between components
- Elasticity: ability to scale resources up and down based on needs
- Reliability: perform an intended function correctly and consistently when expected to
- Review the Well-Architected Framework:
<https://docs.aws.amazon.com/wellarchitected/latest/framework/welcome.html>

Important Points to Remember

CLOUD ADOPTION FRAMEWORK (CAF)

- Leverage AWS experience and best practices to transform and accelerate business outcomes by using AWS
- Understand what makes up the six pillars
 - Business
 - People
 - Governance
 - Platform
 - Security
 - Operations
 - <https://docs.aws.amazon.com/whitepapers/latest/overview-aws-cloud-adoption-framework/foundational-capabilities.html>