



COMMUNITY DAY

— AHMEDABAD —



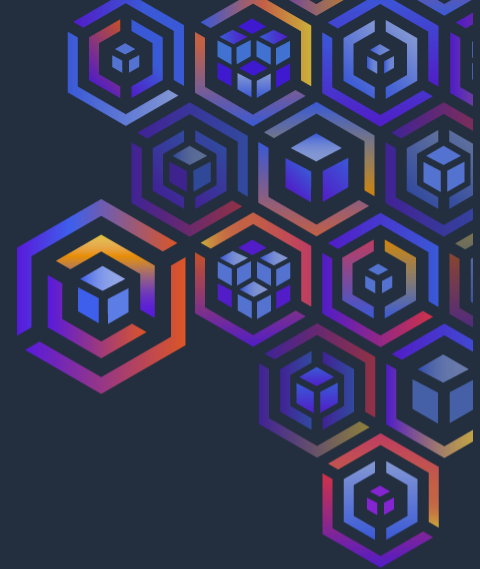
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Being a Frugal Architect

Designing Cost-Optimized Solutions on AWS

KARAN DESAI

Senior Solutions Architect, AWS





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Who am I?



2016

AWS
Solutions Architect
San Francisco



2019

AWS
Sr. Solutions Architect
New York



2021

AWS
Sr. Solutions Architect
Mumbai



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THE FRUGAL ARCHITECT

Simple laws for building cost-aware, sustainable,
and modern architectures.



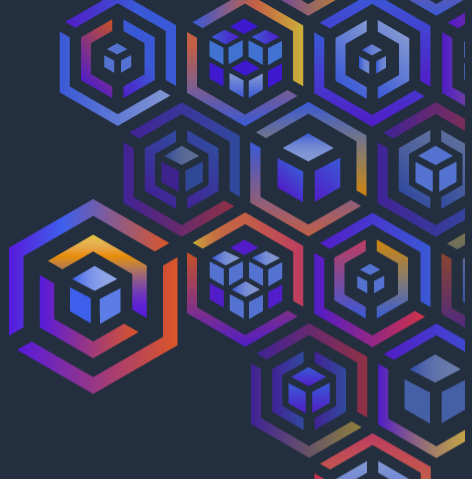
Make Cost a Design Requirement

Align Cost to Business



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Find the dimension you're going to make money over,
then make sure the architecture follows the money



Metric

Number of active users

Number of searches

Bookings or completed transactions

Successful API responses*

Licensed seats

GB of data delivered over a period of time

Use Case

Social media – cost per engaged user

eCommerce – isolate the cost of product searches

eCommerce – isolate the cost to setup the expected
sale or the actual sale itself

SaaS product

App or stand-alone product

Audio or video based product or service

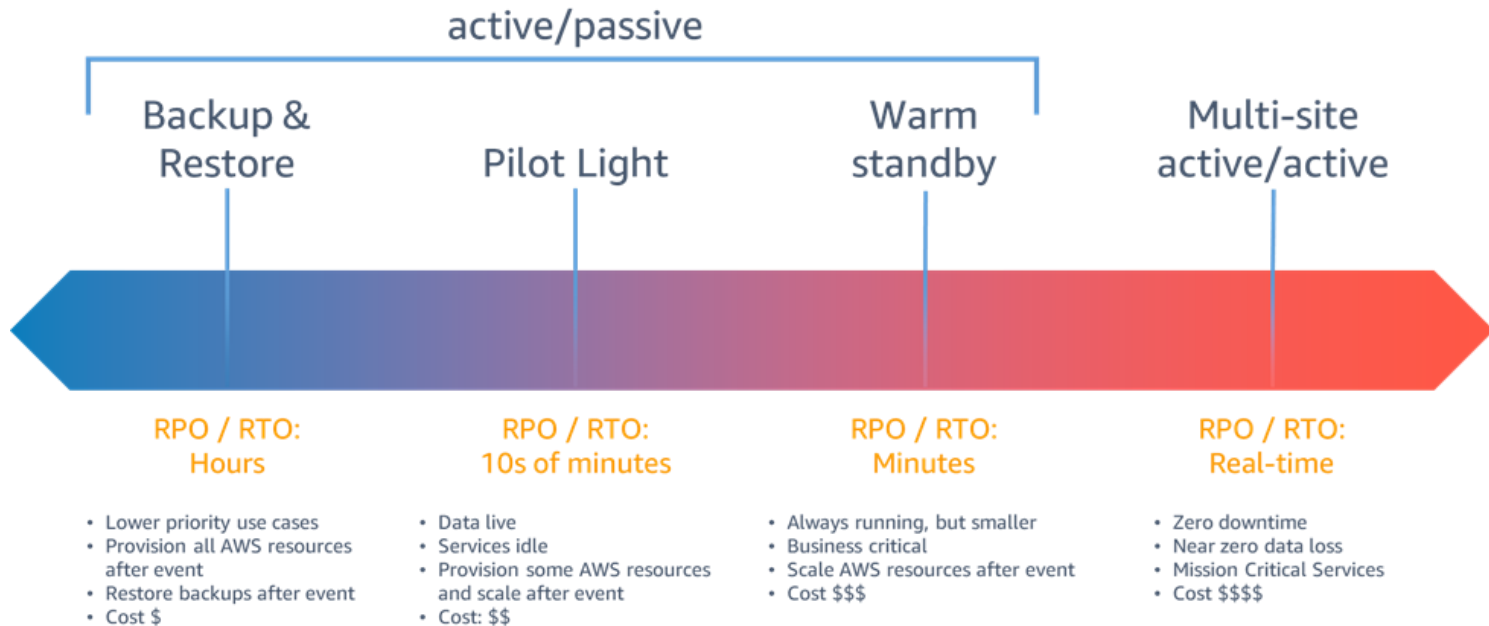
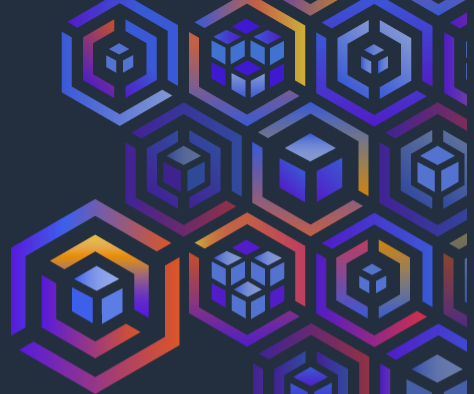
*(calls to your API endpoint don't deliver value, responses back to the caller do)

Architecting is a Series of Trade-offs



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Frugality is about maximizing value, not just minimizing spend
Determine what you're willing to pay for

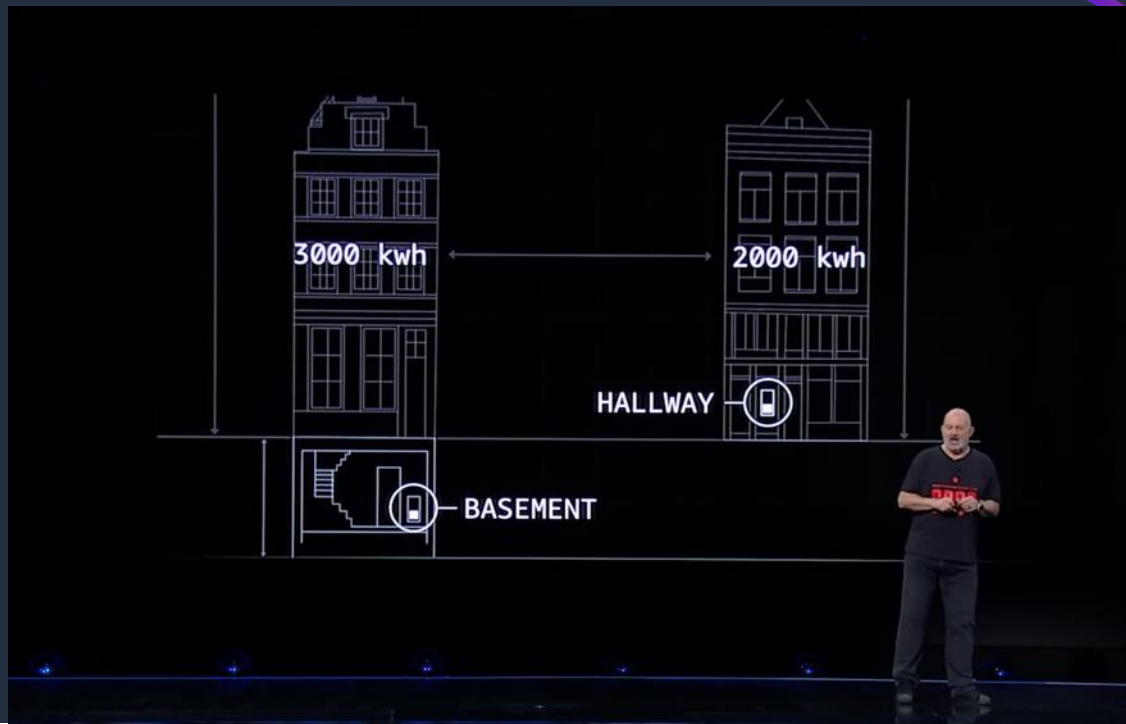


Unobserved Systems Lead to Unknown Costs



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Tracking utilization, spending, errors is crucial for cost management
Return on investment in observability typically far outweighs the expense.



Tunable Architectures Enable Cost Controls

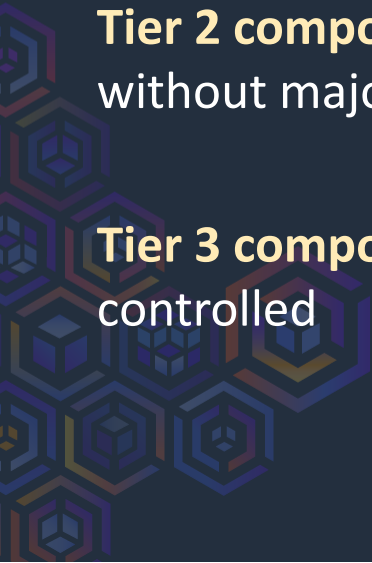


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Tier 1 components: essential; optimize regardless of cost

Tier 2 components: important but can be temporarily scaled down without major impact

Tier 3 components: “nice-to-have”; make them low-cost and easily controlled



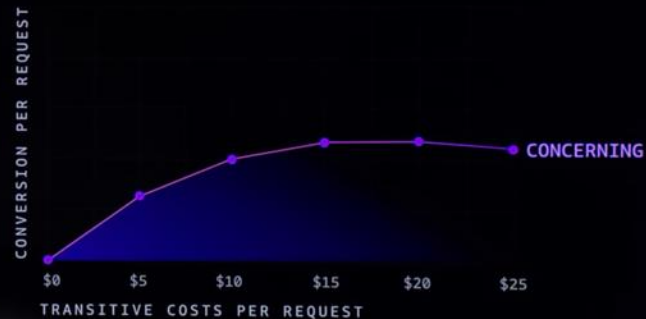
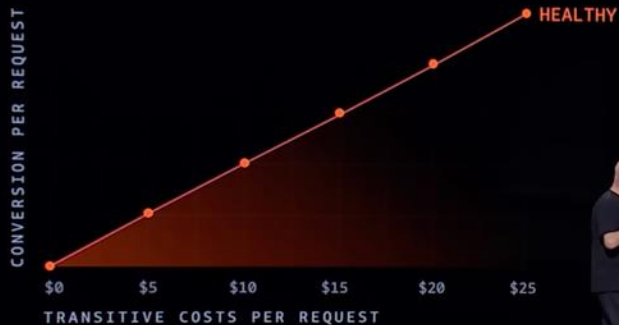
Cost Optimization is Incremental



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Revisit systems to incrementally improve optimization
Profile resource usage and identify waste reduction

Understanding the value of new features



Unchallenged Success Leads to Assumptions

“The most dangerous phrase in
the English language is:
‘We’ve always done it this way...’”

— REAR ADMIRAL GRACE HOPPER





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"We are a Java shop"

"We will use MongoDB because it worked great on our previous project"

"We don't want to touch what is working fine"

Unchallenged success breeds complacency through assumptions.

We must always look for ways to *question, optimize and improve.*



<https://thefrugalarchitect.com/>

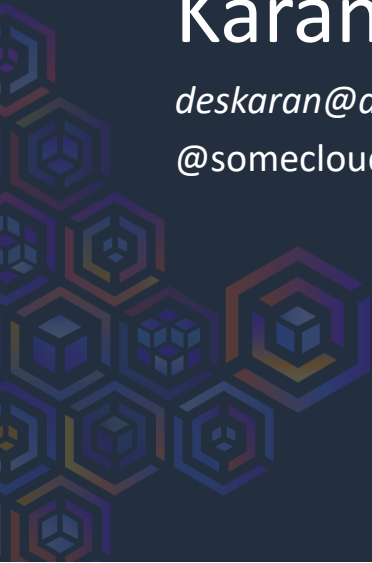


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AN AWS ORIGINAL SERIES

NOW GO BUILD

Where will the next
big idea come from?

