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NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

ARC323

Designing a multi-tenant SaaS tiering and throttling strategy

Tod Golding

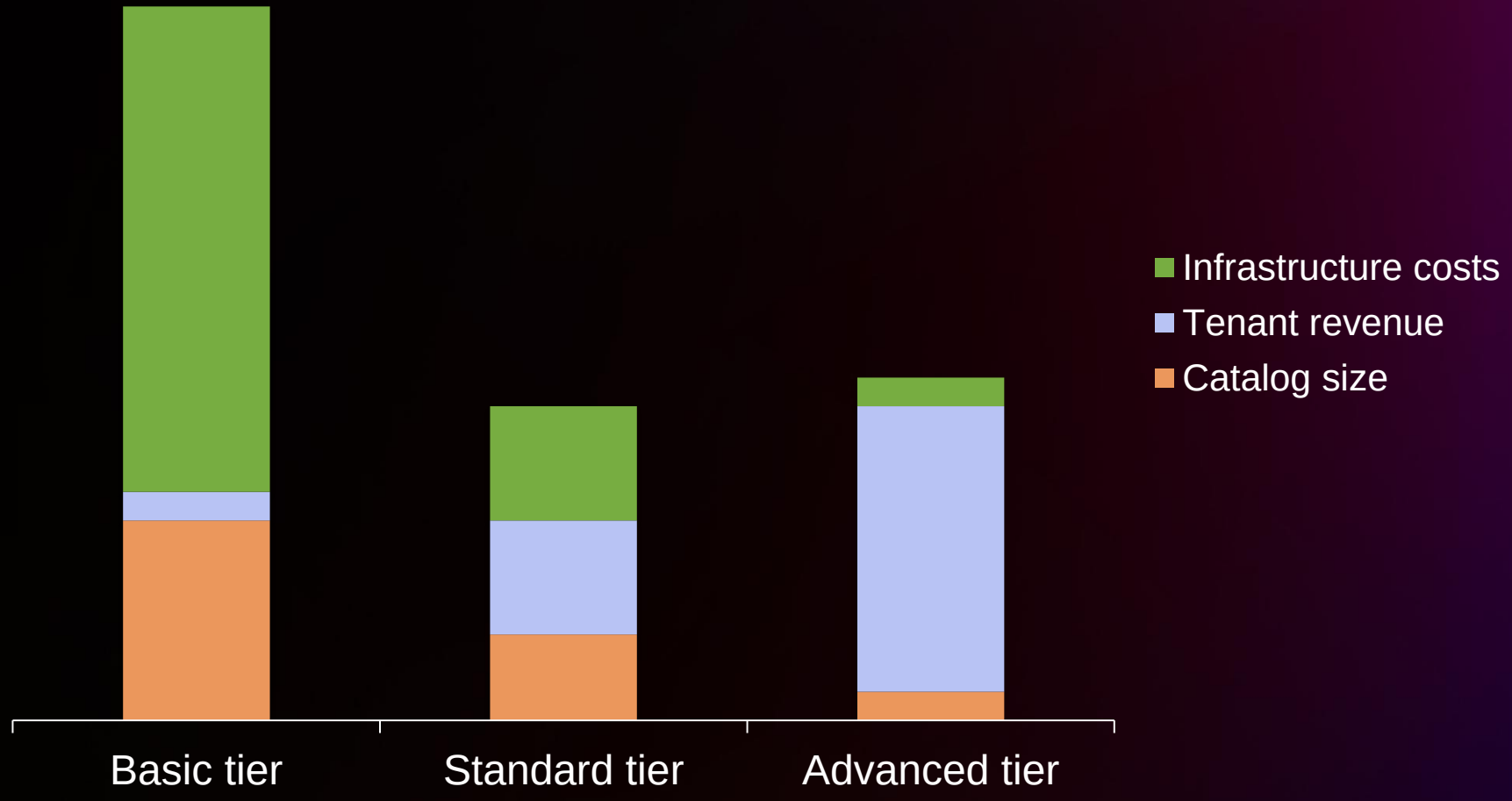
Senior Principal Solutions Architect
AWS SaaS Factory

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How does tiering impact the success of a SaaS business?

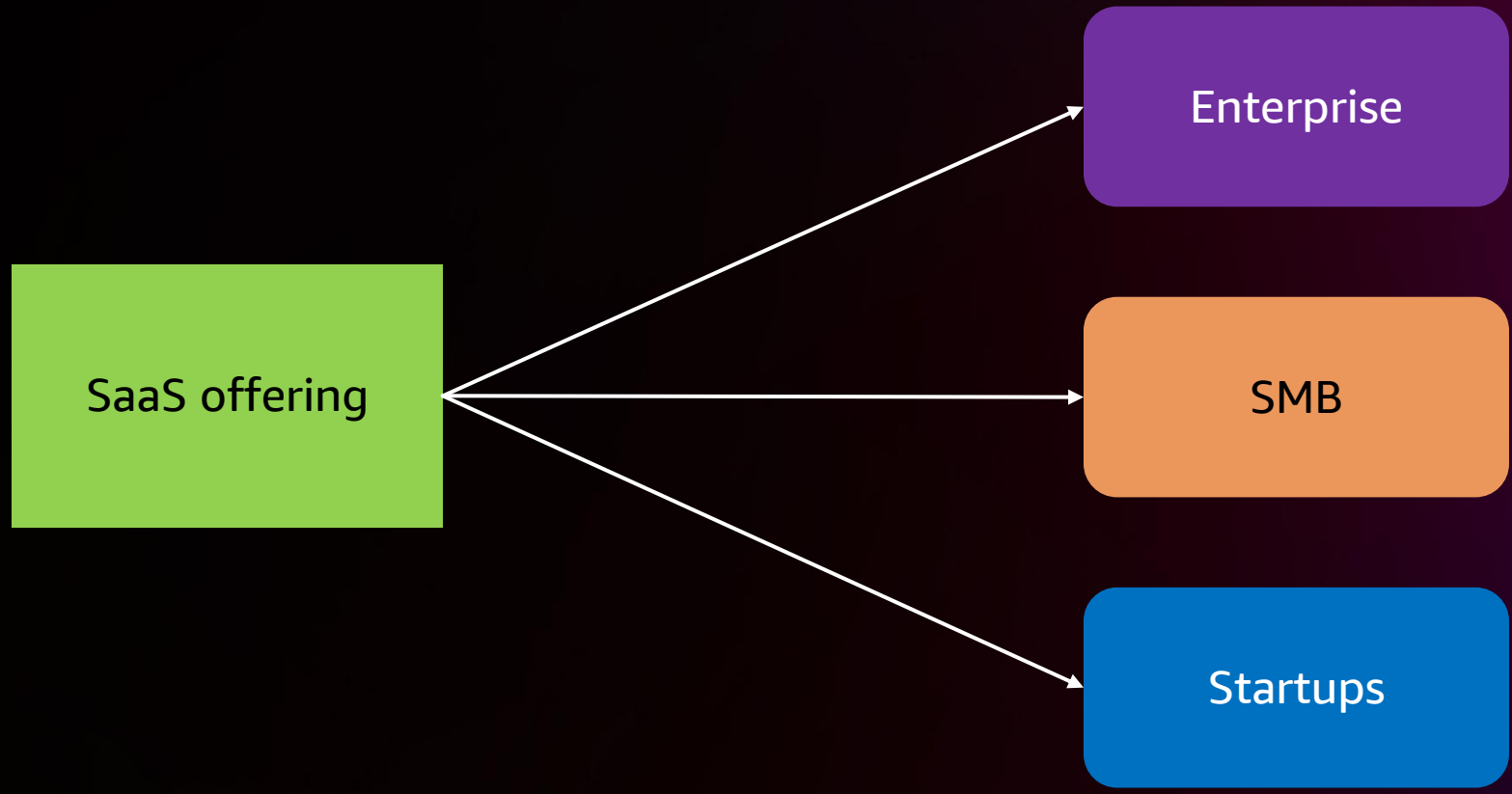
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Aligning cost with consumption



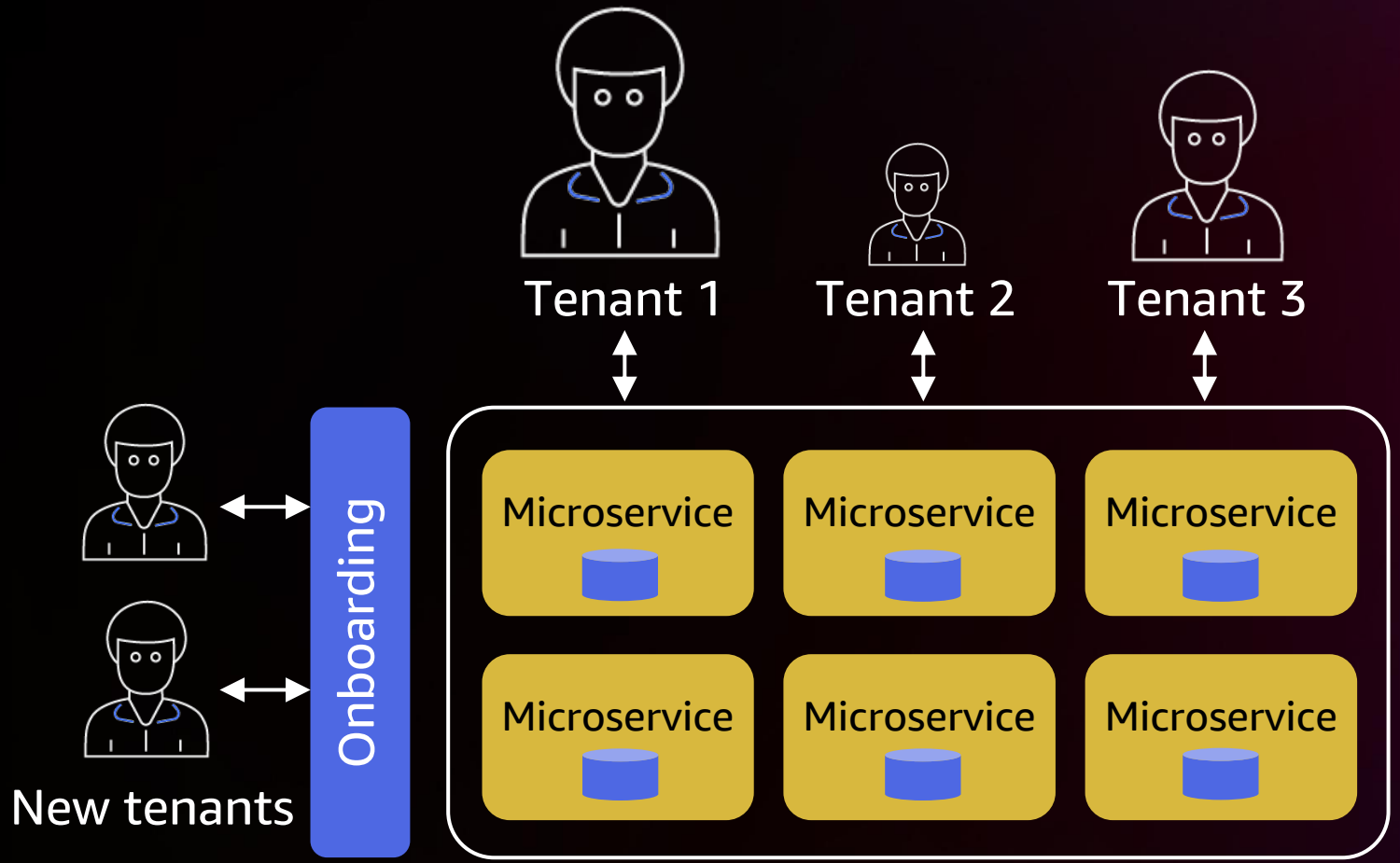
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Reaching more segments



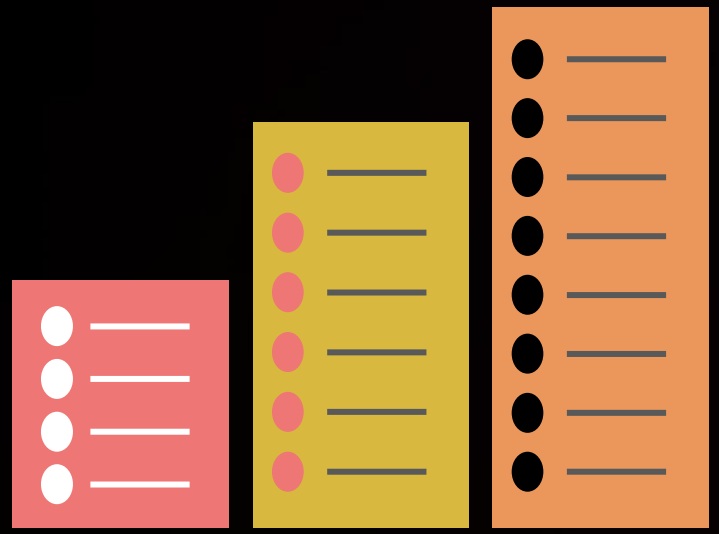
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Supporting a well-defined range of experiences

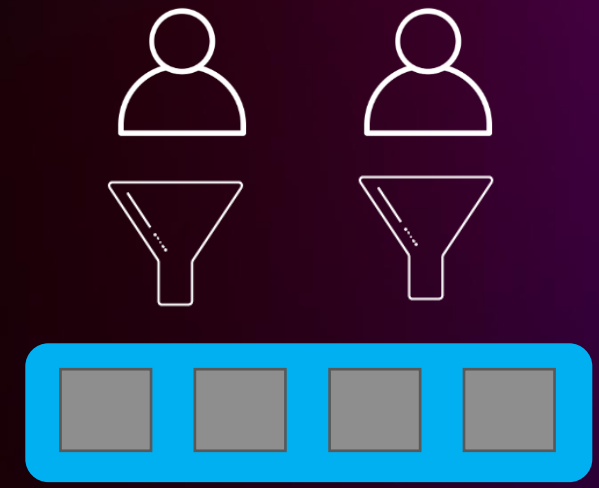


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Two views of tiering



How do I sell it?



How do I build/apply tiering?

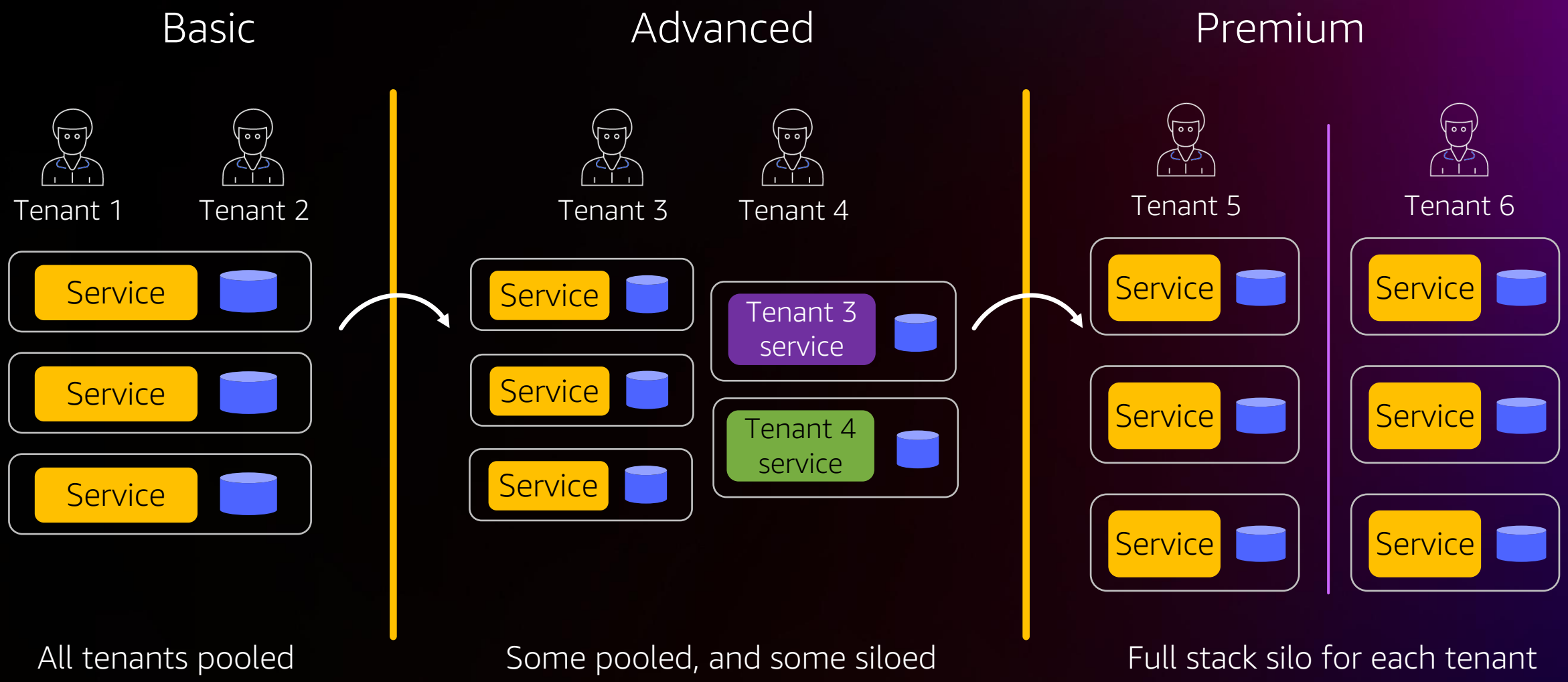
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What is the customer’s view of tiering?

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Tiering: Establishing value boundaries



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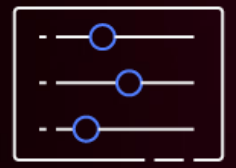
Common tiering boundaries



Consumption



Isolation



Features

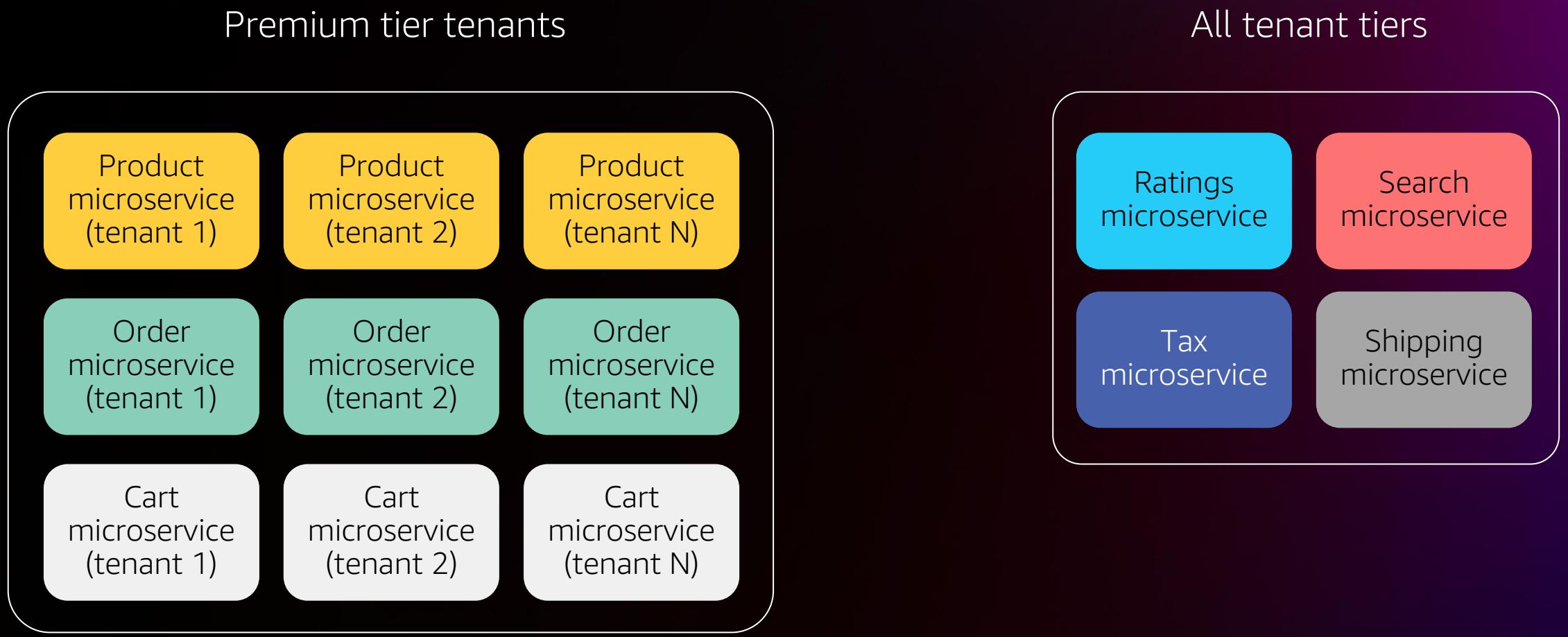


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Expectations around what's shared and what's not

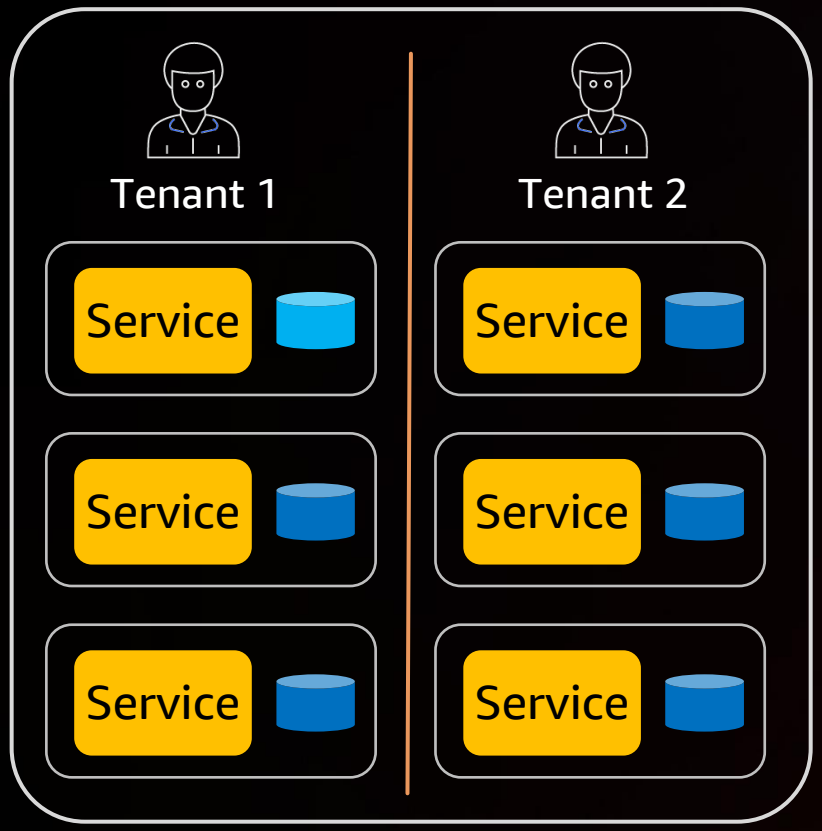


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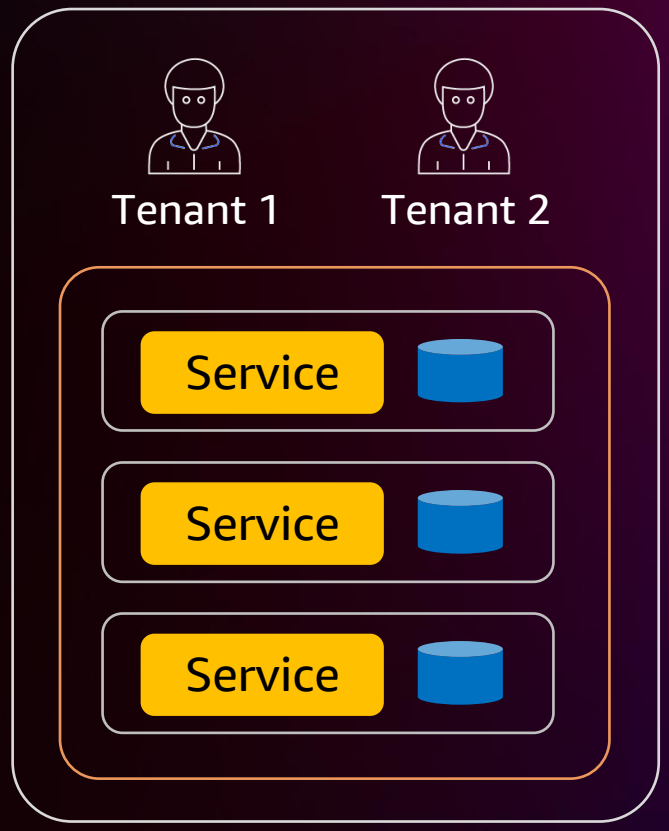
How and where is tiering applied within your architecture?

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Tier-driven deployment models



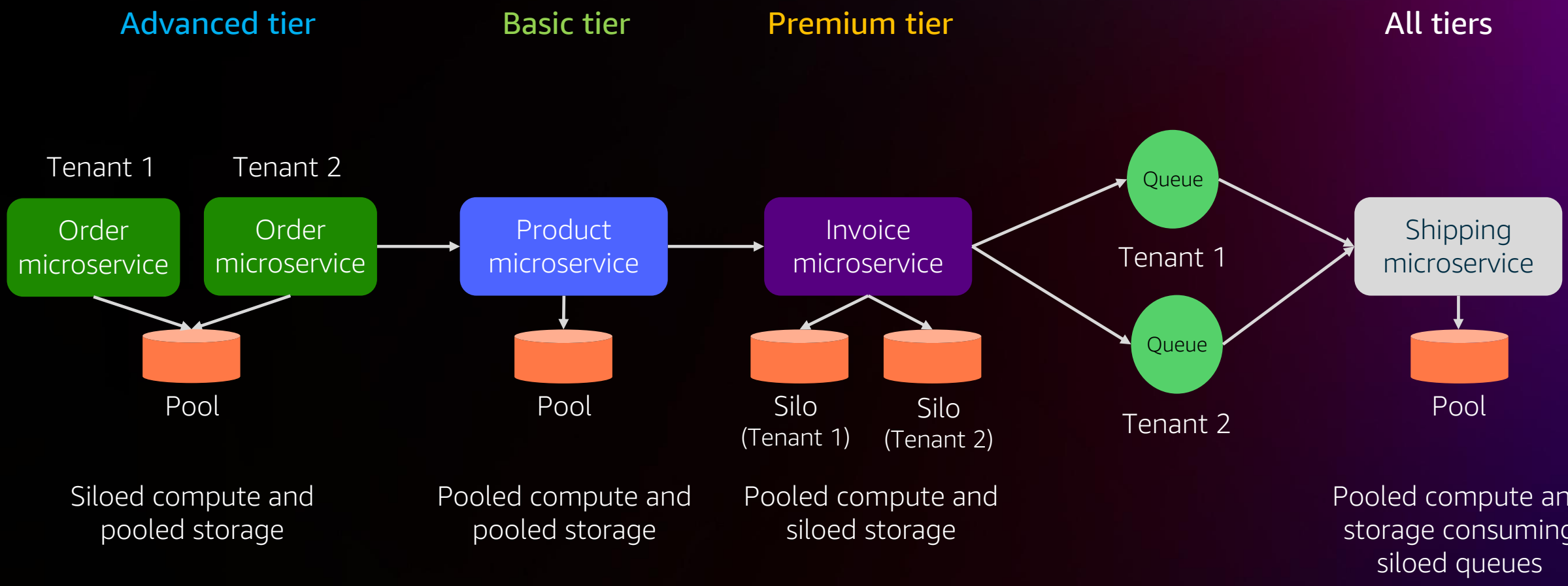
Advanced tier tenants



Basic tier tenants

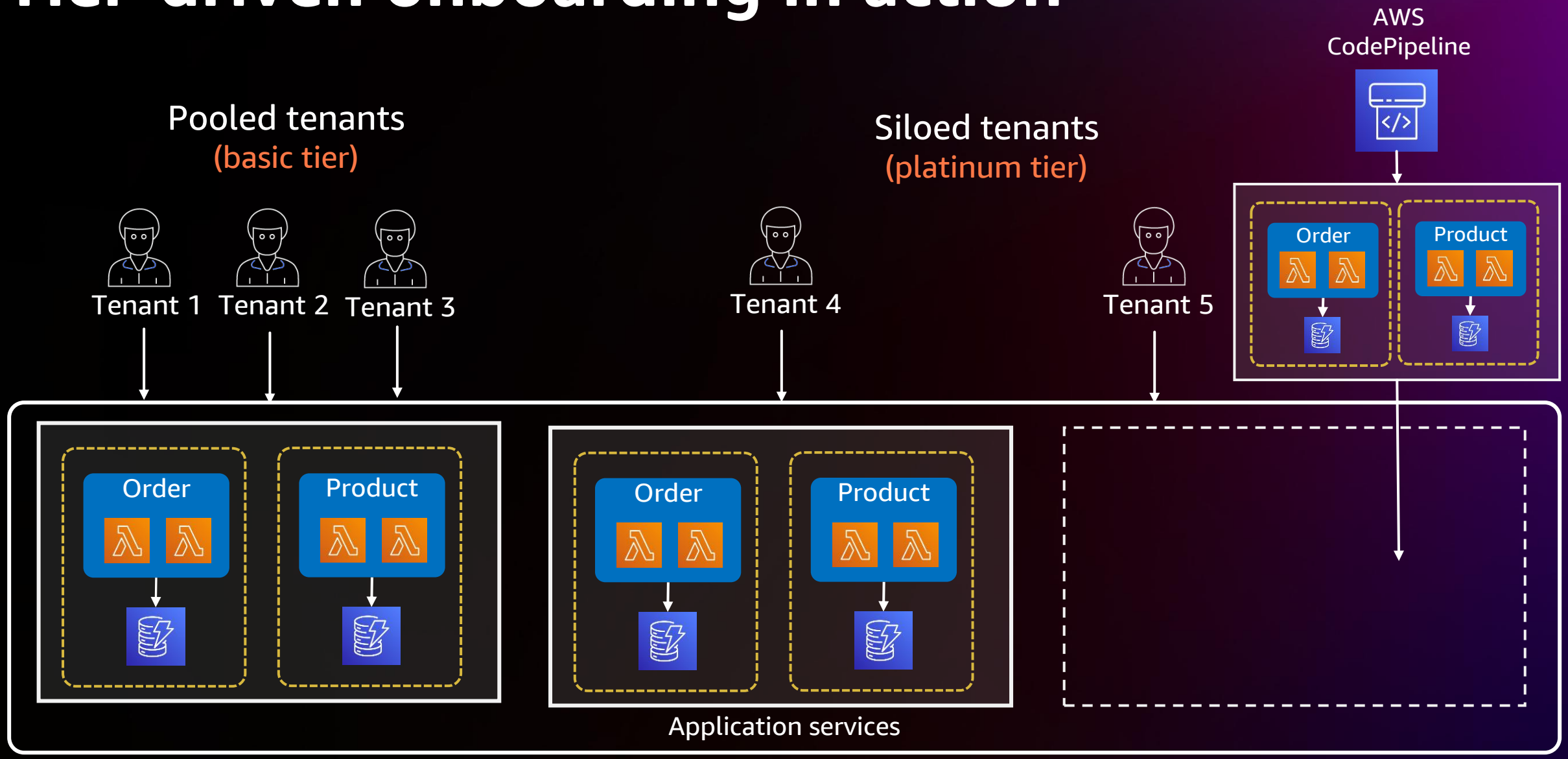
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Deployment-based tiering



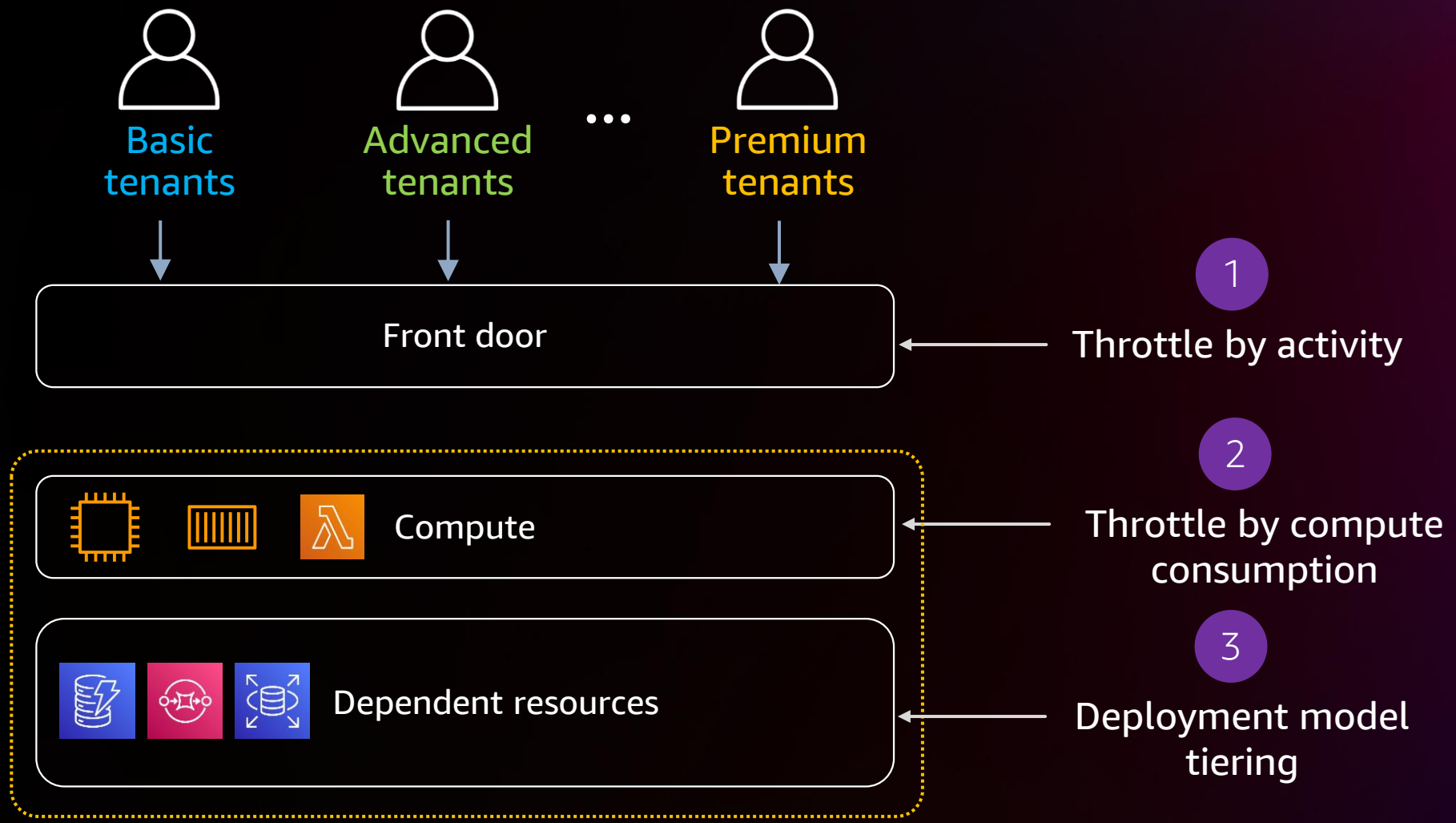
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Tier-driven onboarding in action



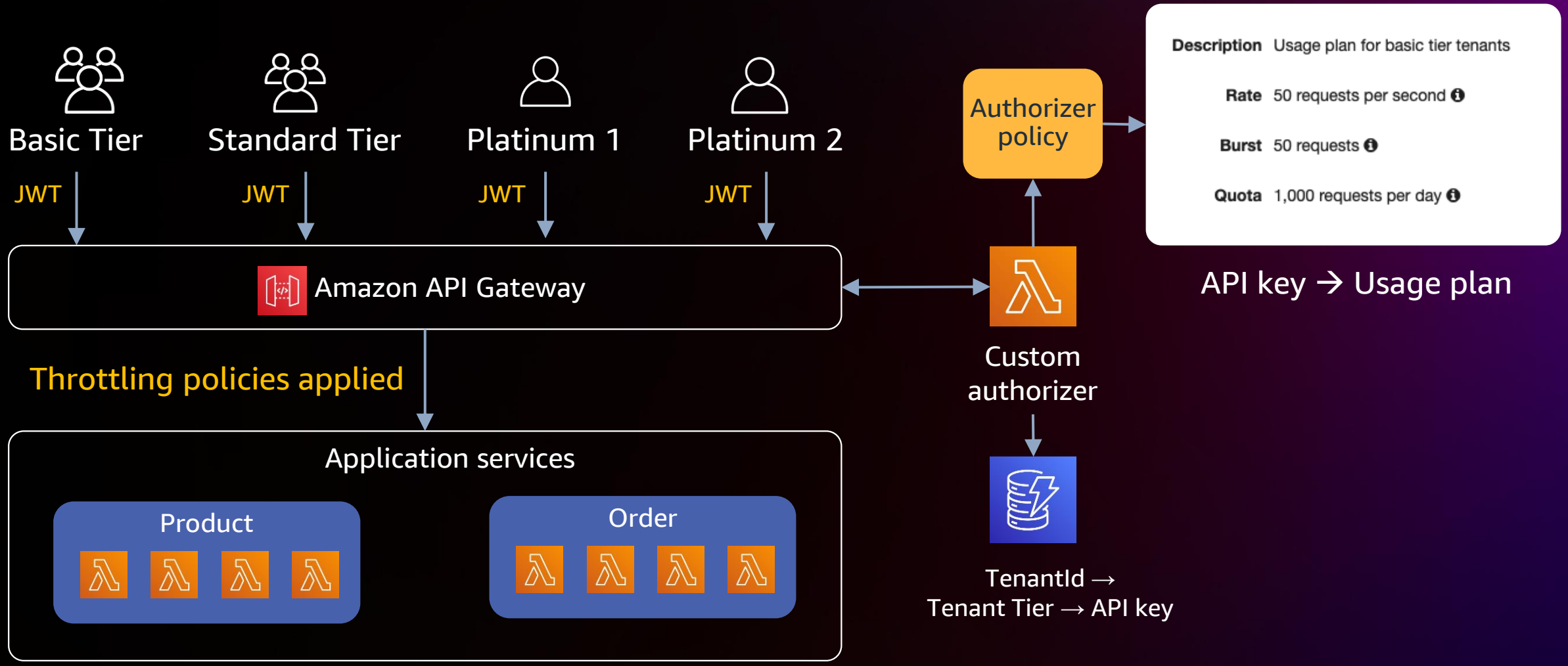
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Tiering meets layered throttling



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Serverless throttling at the front door



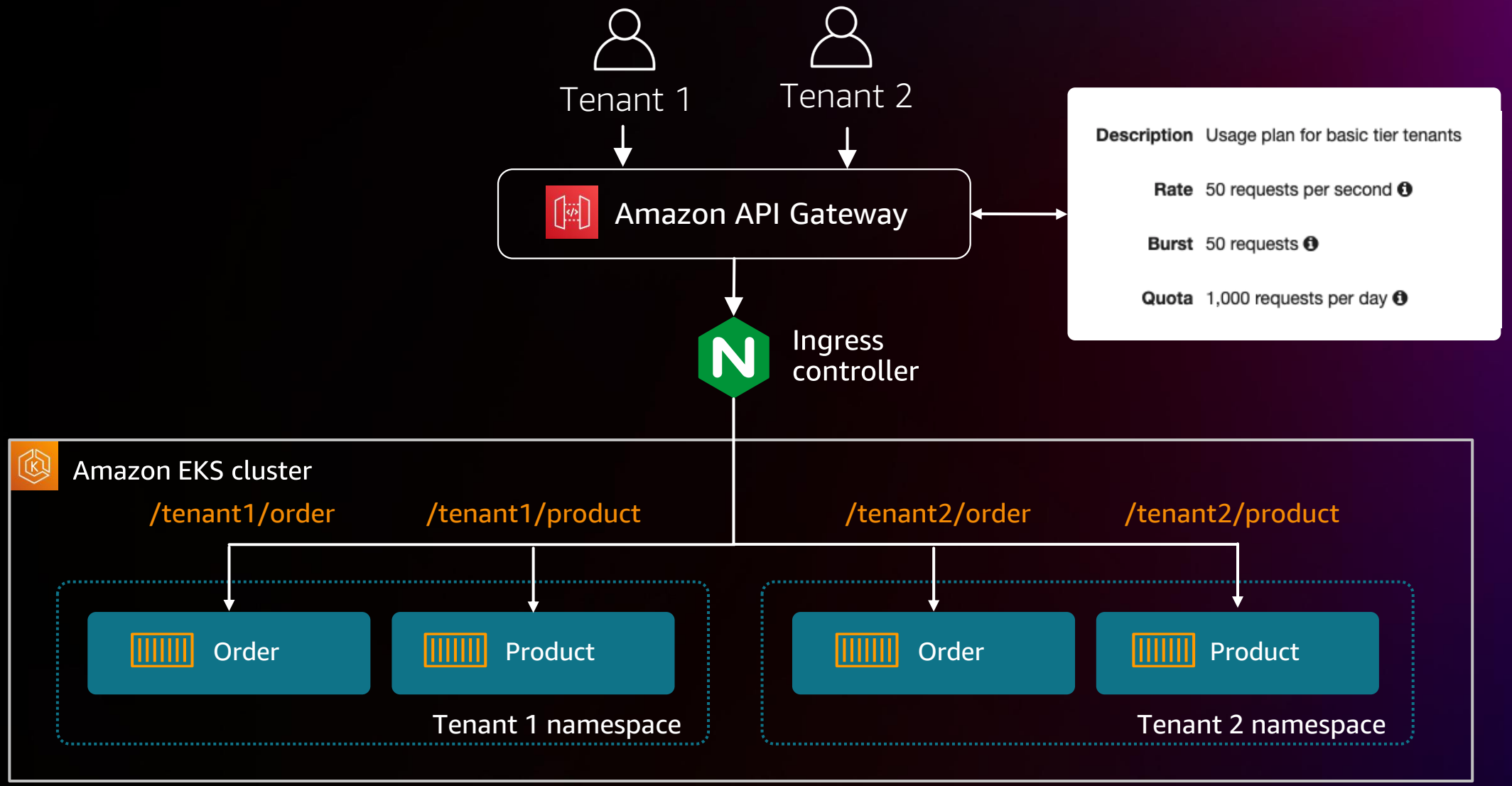
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Using authorizer as the source

```
600       DefinitionBody:
601         openapi: 3.0.1
602         ...
603         x-amazon-apigateway-api-key-source : "AUTHORIZER"
```

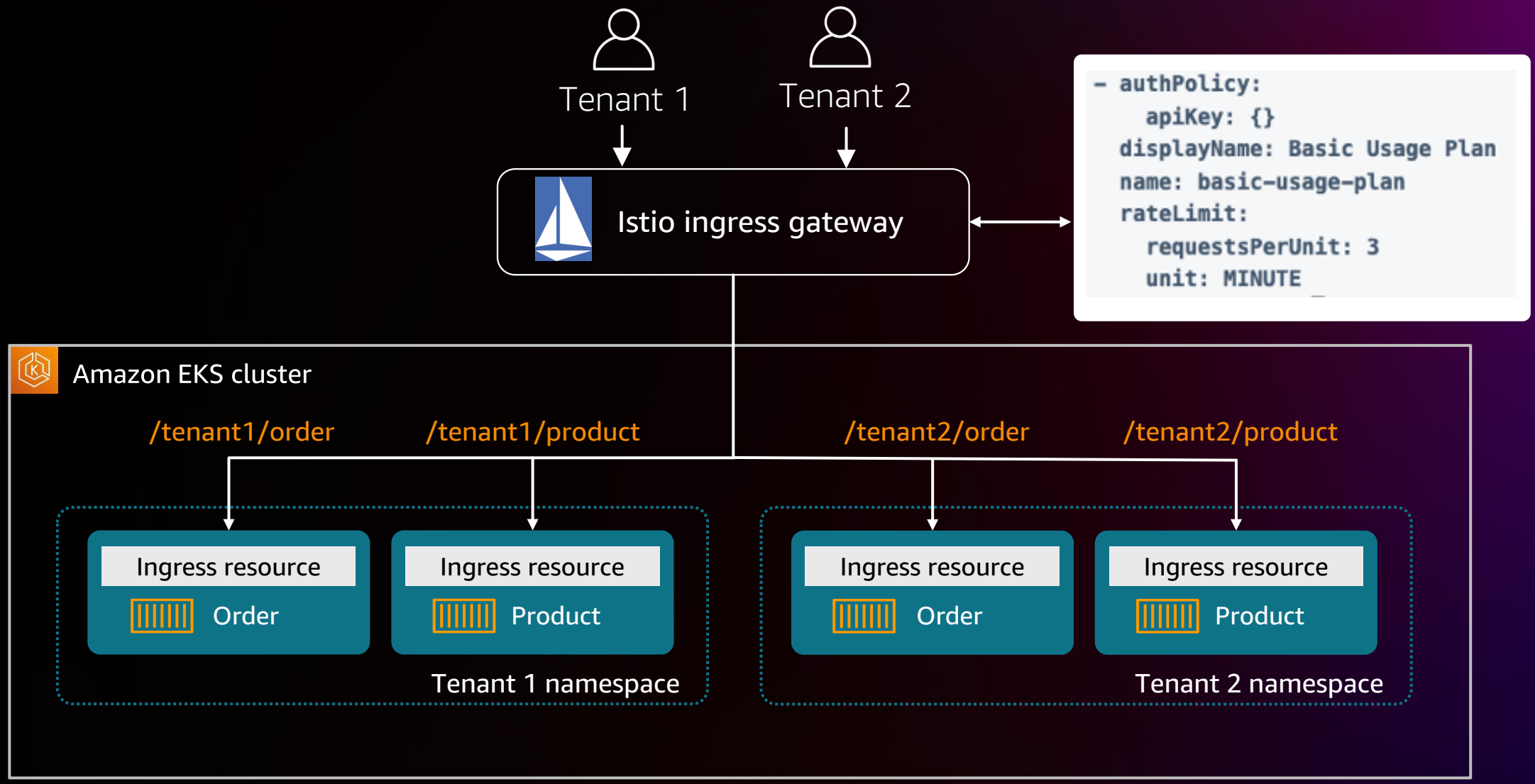
```
116     #pass sts credentials to lambda
117     context = {
118         'accesskey': credentials['AccessKeyId'], # $context.authorizer.key -> value
119         'secretkey' : credentials['SecretAccessKey'],
120         'sessiontoken' : credentials["SessionToken"],
121         'userName': user_name,
122         'tenantId': tenant_id,
123         'userPoolId': userpool_id,
124         'apiKey': api_key,
125         'userRole': user_role
126     }
127
128     authResponse['context'] = context
129     authResponse['usageIdentifierKey'] = api_key
130
131     return authResponse
```

Container throttling at the front door



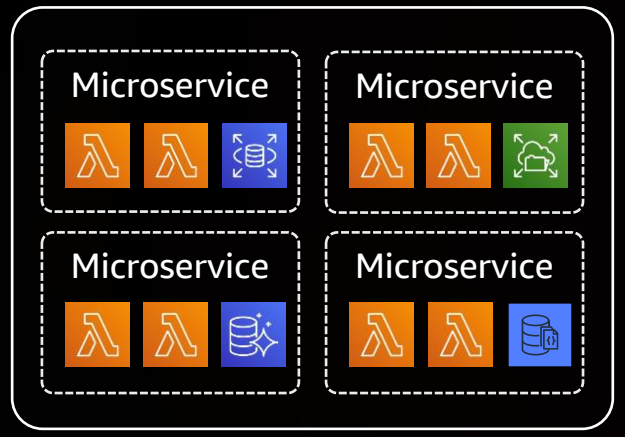
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Container throttling with Istio



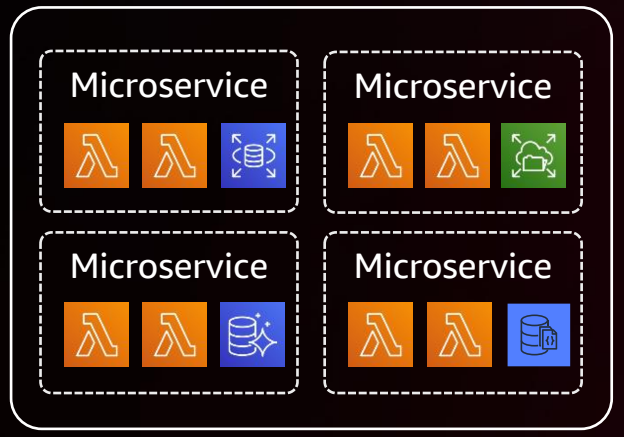
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Serverless compute tiering



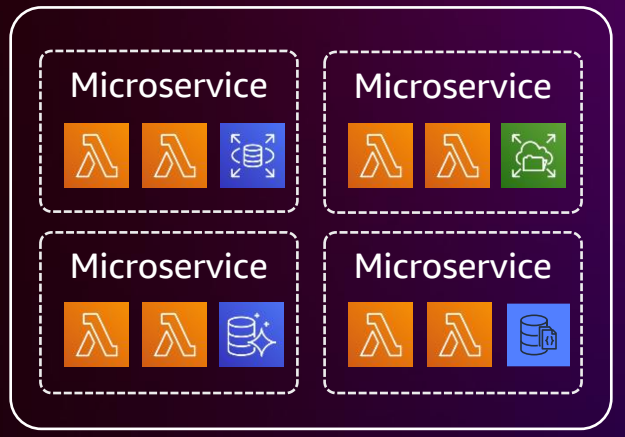
Basic tier

Reserve concurrency = 100



Advanced tier

Reserve concurrency = 300



Premium tier

Reserve concurrency = All unreserved

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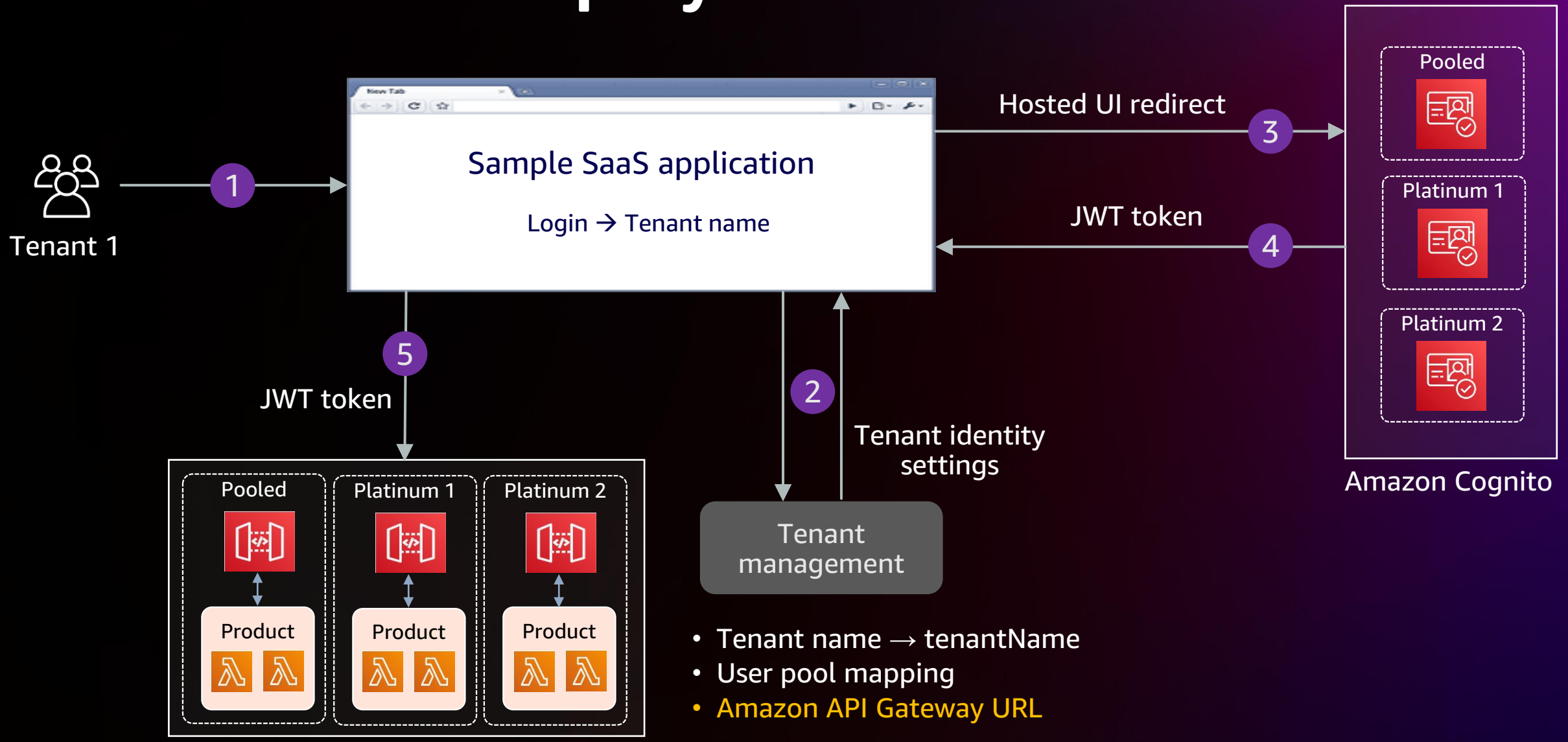
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Container compute throttling



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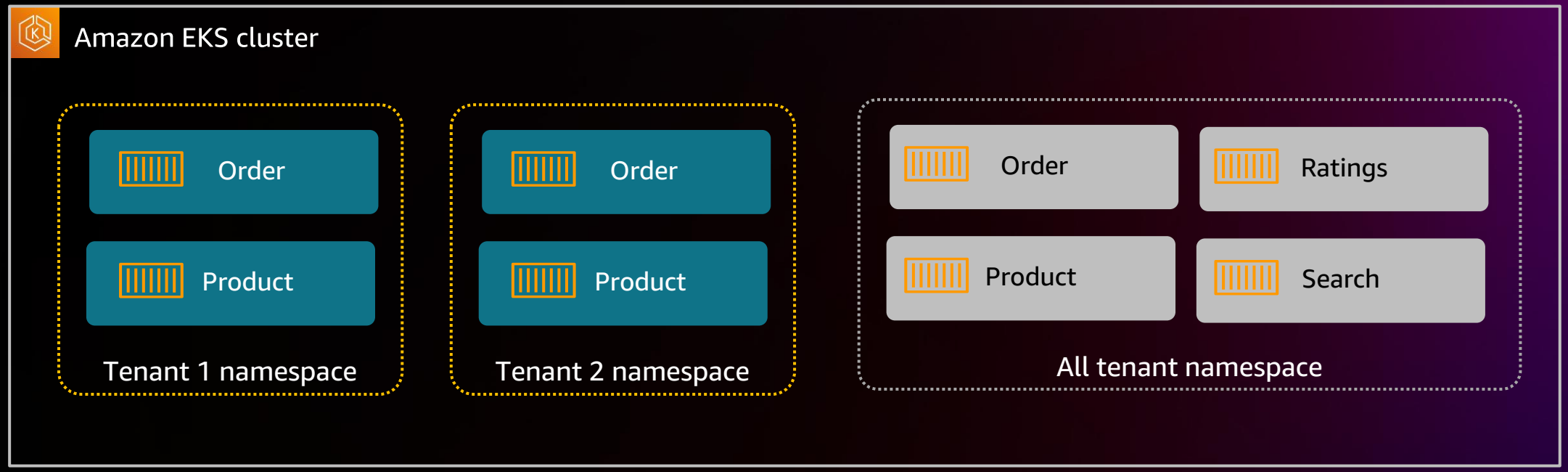
Tiered function deployment



- Tenant name → tenantName
- User pool mapping
- Amazon API Gateway URL

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Tiered namespace deployment



Premium tier tenants

Basic tier tenants

Drivers may include isolation, compliance, noisy neighbor

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Takeaways

- Use tiering to broaden the reach of your SaaS offering
- Don’t think of tiering purely as a pricing construct
- Use tiering to establish value boundaries in your architecture
- Tiering can be applied at multiple layers of your SaaS environment
- Tiering technologies and strategies vary stack
- Make tiering an early priority in your multi-tenant design

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More SaaS sessions

Breakout sessions

- SAS305 – SaaS architecture patterns: From concept to implementation
- SAS405 – SaaS microservices deep dive: Simplifying multi-tenant development
- SAS306 – SaaS migration: Inside a real-world multi-tenant transformation
- SAS302 – Supporting extensibility in SaaS environments
- PEX310 – Optimizing your multi-tenant SaaS architecture

Workshops

- SAS403 – SaaS microservices deep dive: Multi-tenancy meets microservices
- SAS402 – Serverless meets SaaS: Inside a real-world serverless SaaS solution
- SAS401 – Amazon EKS SaaS: Building a working multi-tenant environment

More SaaS sessions

Chalk talks

- SAS307 – DevOps and SaaS: Applying automation in multi-tenant environments
- SAS303 – SaaS anywhere: Building SaaS solutions that run in hybrid models
- SAS301 – Multi-tenant meets ML: Building ML-based SaaS environments
- SAS304 – Solving the SaaS compliance puzzle
- PEX313 – The SaaS control plane: The heart of SaaS growth
- ARC403 – Amazon EKS SaaS deep dive: Inside a multi-tenant EKS solution
- ARC323 – Designing a multi-tenant SaaS tiering and throttling strategy
- SVS315 – Building multi-tenant applications with AWS Lambda and AWS Fargate

Builders' session

- ARC327 – How to optimize cost in your multi-tenant architecture

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Additional resources

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Check out the SaaS on AWS hub for more resources and insights

3

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Access our curated list of SaaS reference solutions, demos, tech events, and more

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Thank you!

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