
AWS
re:Invent
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CON323

Amazon ECS Service Connect: Simplified interservice communication

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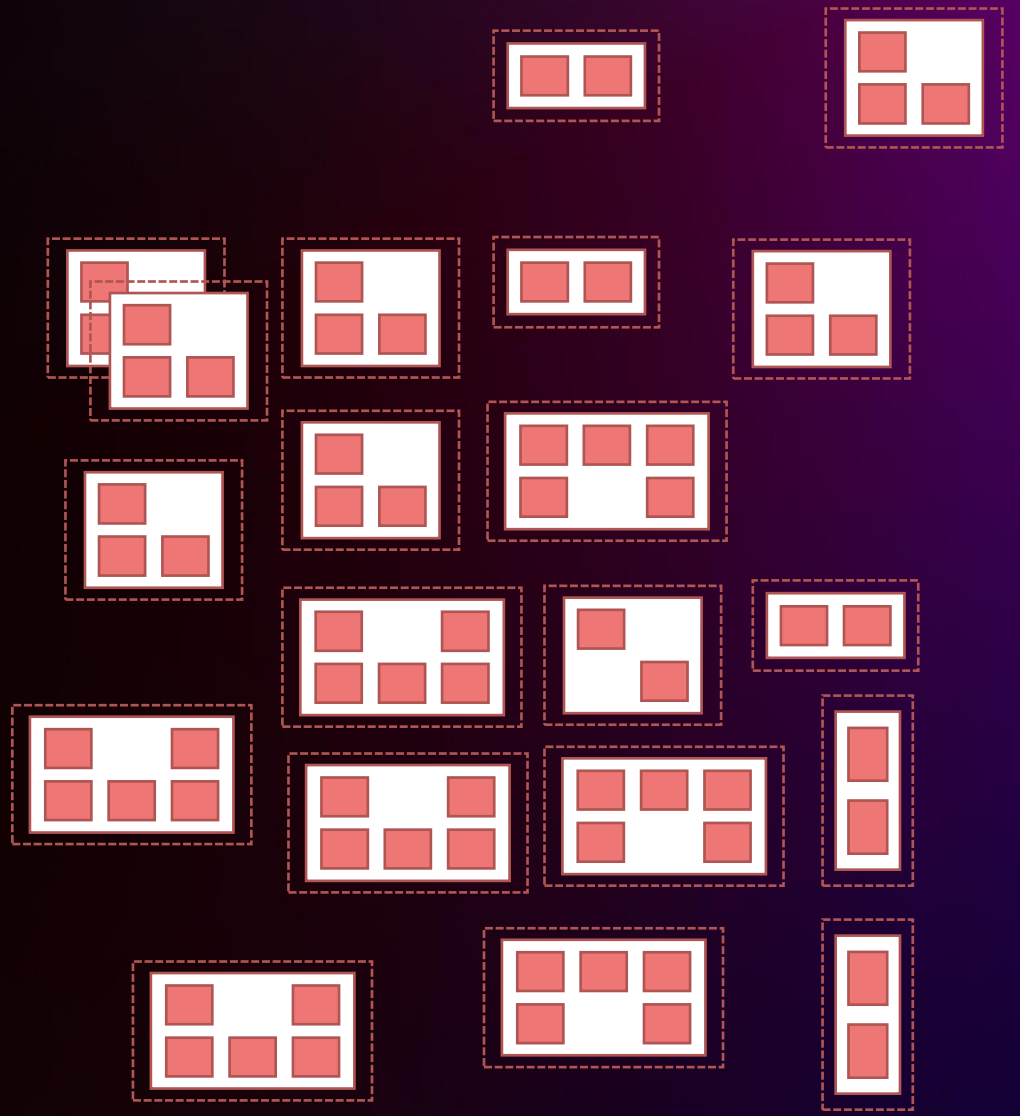
Connectivity for Amazon ECS services today

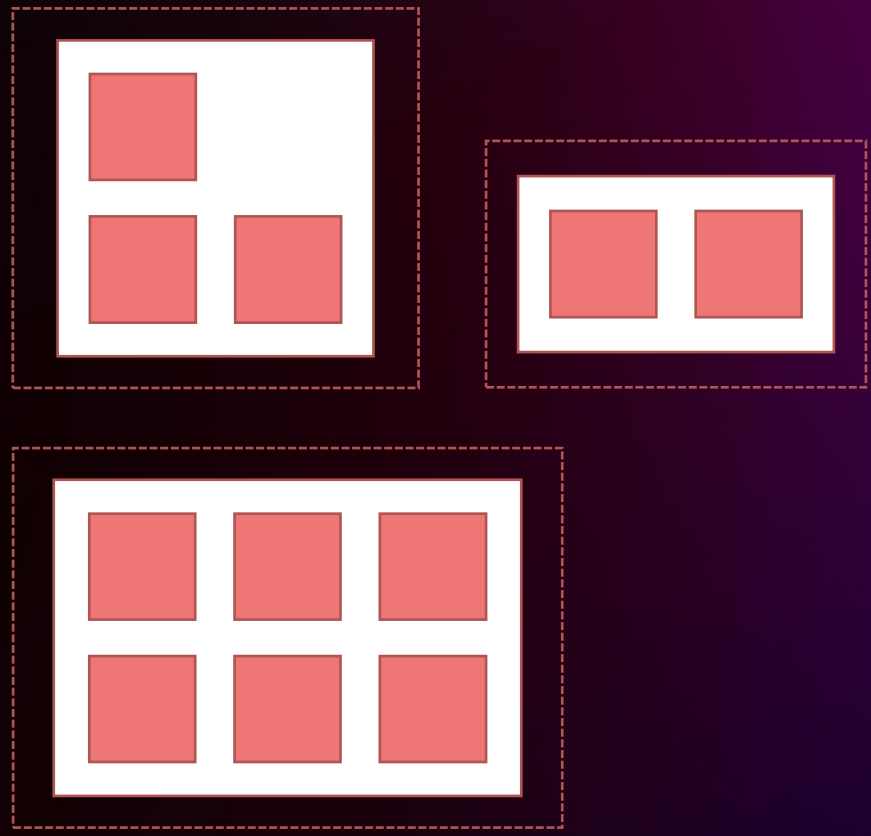
Connecting microservices reliably is hard

- Large number of services
- Complexity grows exponentially
- Multiple versions and stages coexist
- Infrastructure scales dynamically
- Unhealthy endpoints are replaced



How to interconnect your Amazon ECS services

- Amazon ECS Service Discovery
- Elastic Load Balancing (ELB)
- AWS App Mesh



Using Amazon ECS Service Discovery

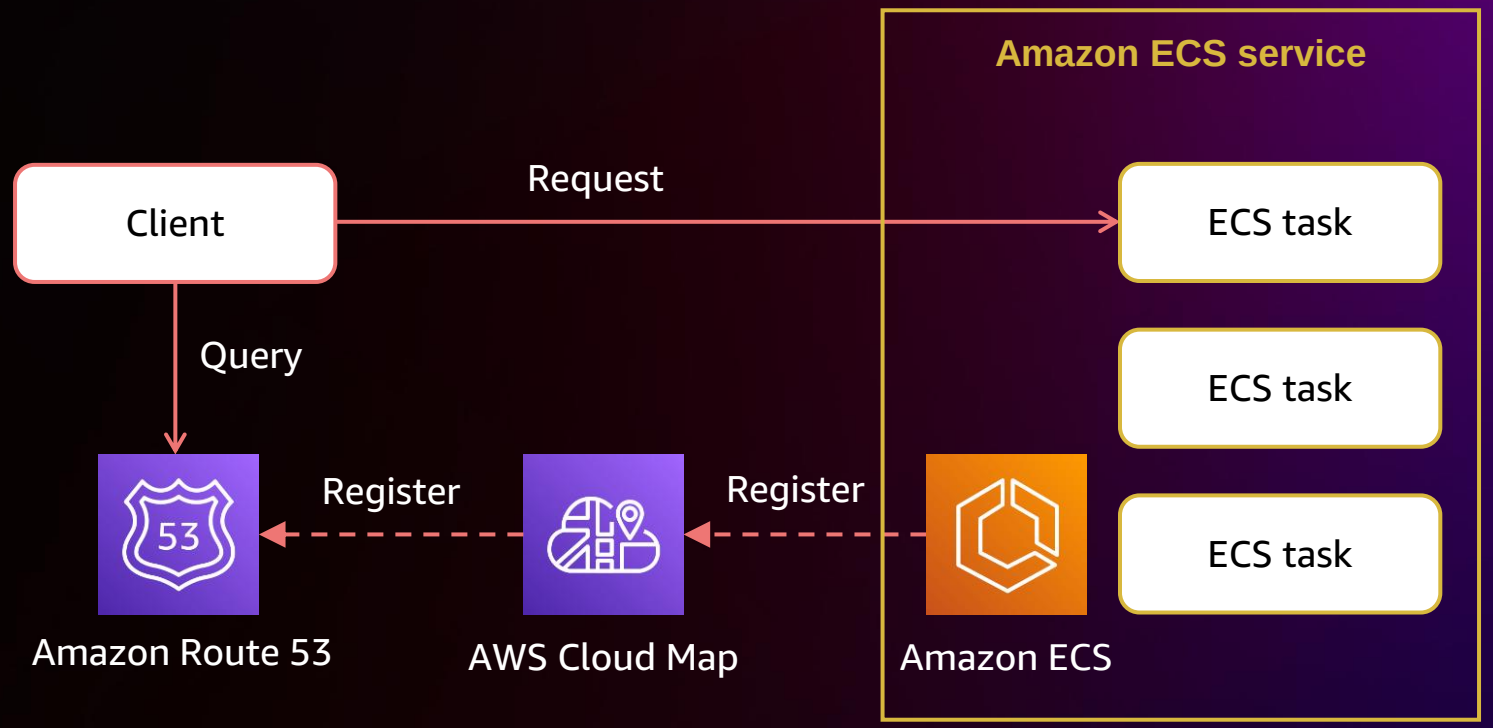
Simple DNS discovery

Clients connect directly to providers

Fewer components in the system

No traffic telemetry

DNS offers only basic discovery



Using Elastic Load Balancing

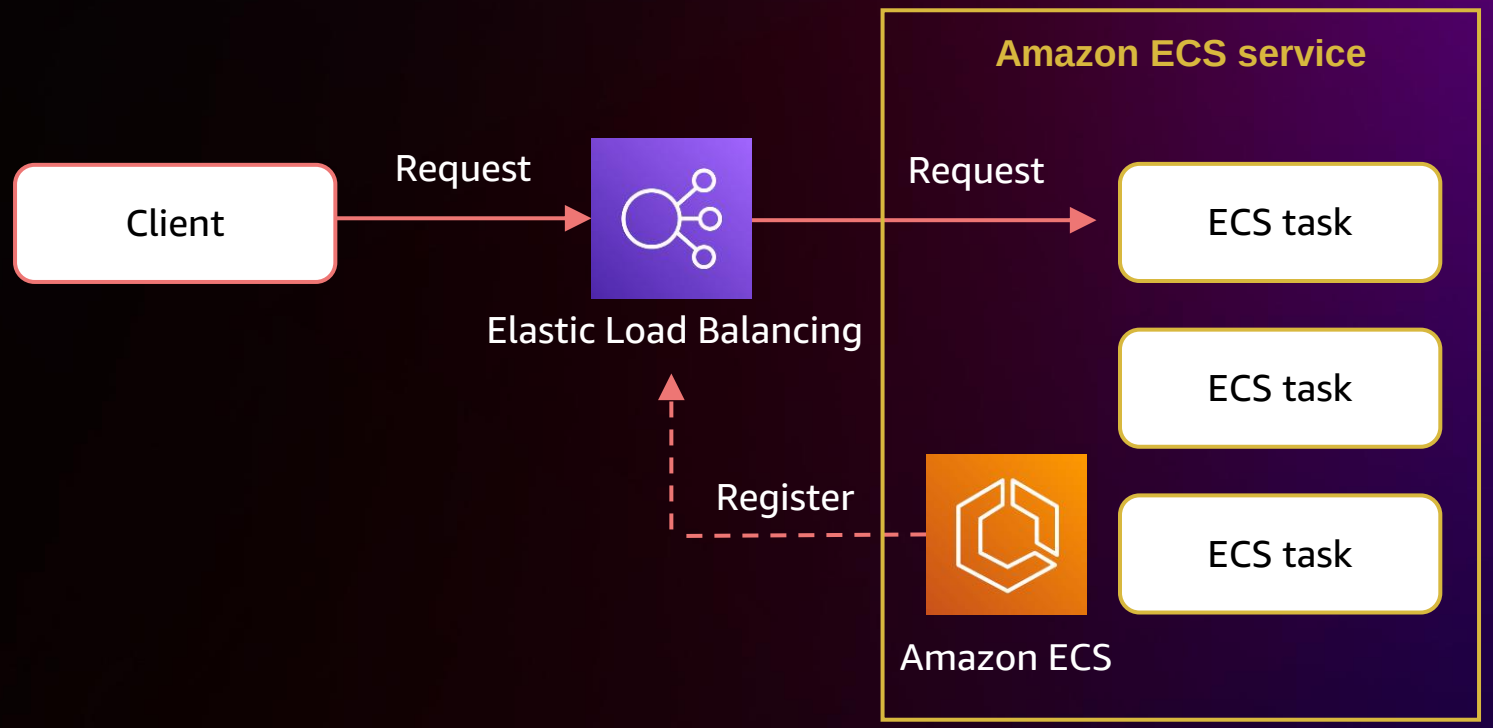
Discovery is abstracted away

Rich feature set

Traffic telemetry

Additional infrastructure

Additional latency



Using AWS App Mesh

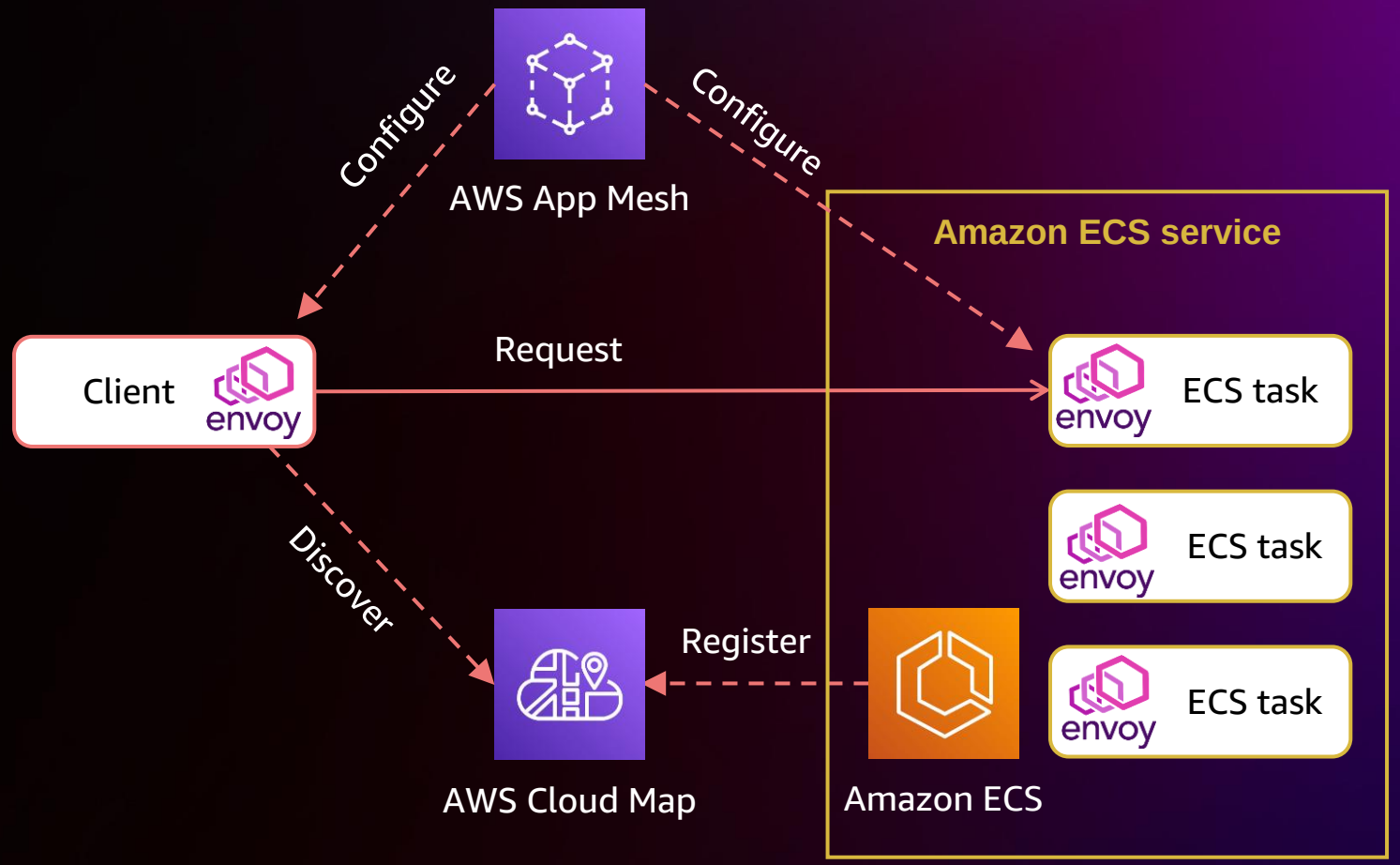
Rich traffic observability

Fine-grain traffic controls

Encryption and authentication

Additional components to manage

Flexibility comes with complexity



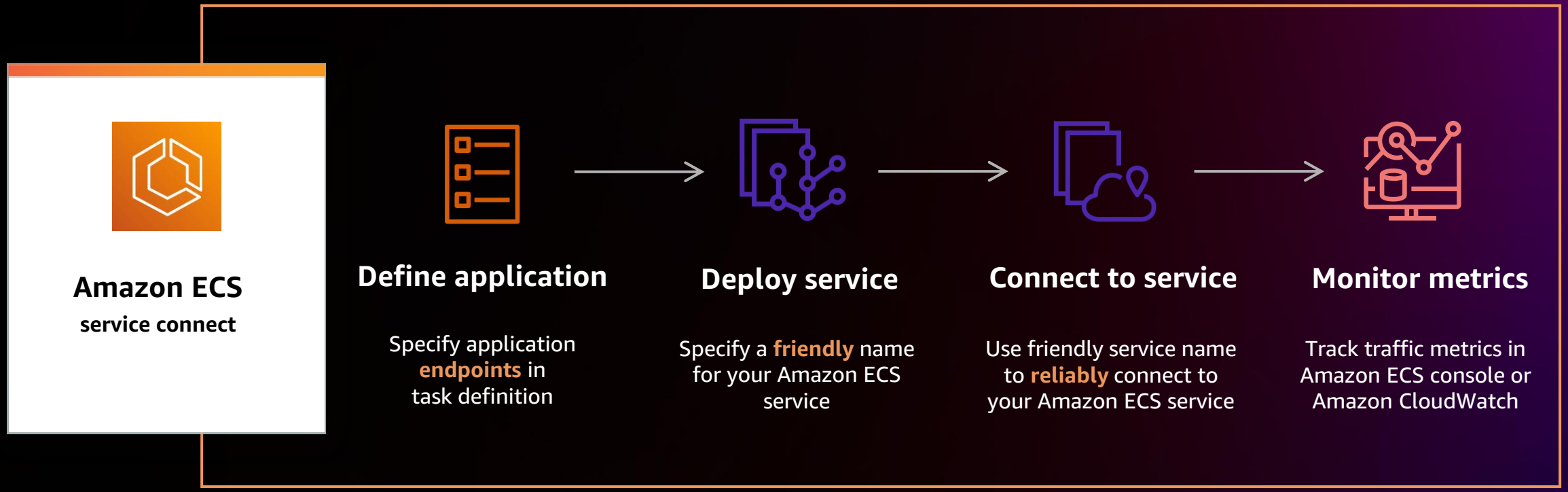
Wouldn’t it be nice to combine…

Simplicity of Amazon ECS Service Discovery

With traffic telemetry provided by Elastic Load Balancers

And traffic resilience offered by AWS App Mesh

Introducing Amazon ECS Service Connect



Amazon ECS Service Connect at a glance

- Evolution of Amazon ECS Service Discovery
- Reliable service-to-service connectivity
- Rich traffic telemetry out of the box
- Safe and robust native Amazon ECS deployments

Amazon ECS Service Connect overview

Simple discovery of your Amazon ECS services

- Each Amazon ECS service gets a simple name — backend
- Services are organized in namespaces — my-app.local
- Clients connect to services — backend.my-app.local
- Services can reside in different Amazon ECS clusters

Reliable service-to-service connectivity

- Additional layer of traffic health checking
- Endpoints that return errors are removed from routing
- Failed calls are automatically retried
- Support for TCP/HTTP 1.x/HTTP 2.x/gRPC connections

Rich traffic telemetry

- Traffic dashboards right in Amazon ECS console
- TCP/HTTP/gRPC telemetry
- Traffic metrics are sent to CloudWatch and can be exported
- Logs can be sent to your preferred Amazon ECS log provider

More robust Amazon ECS deployments

- Support for native Amazon ECS rolling deployments
- Zero-downtime deployments with connection draining
- Faster deployments compared to Amazon ECS Service Discovery

Amazon ECS Service Connect: How it works

Simple discovery of Amazon ECS services

Create Amazon ECS Service Connect service

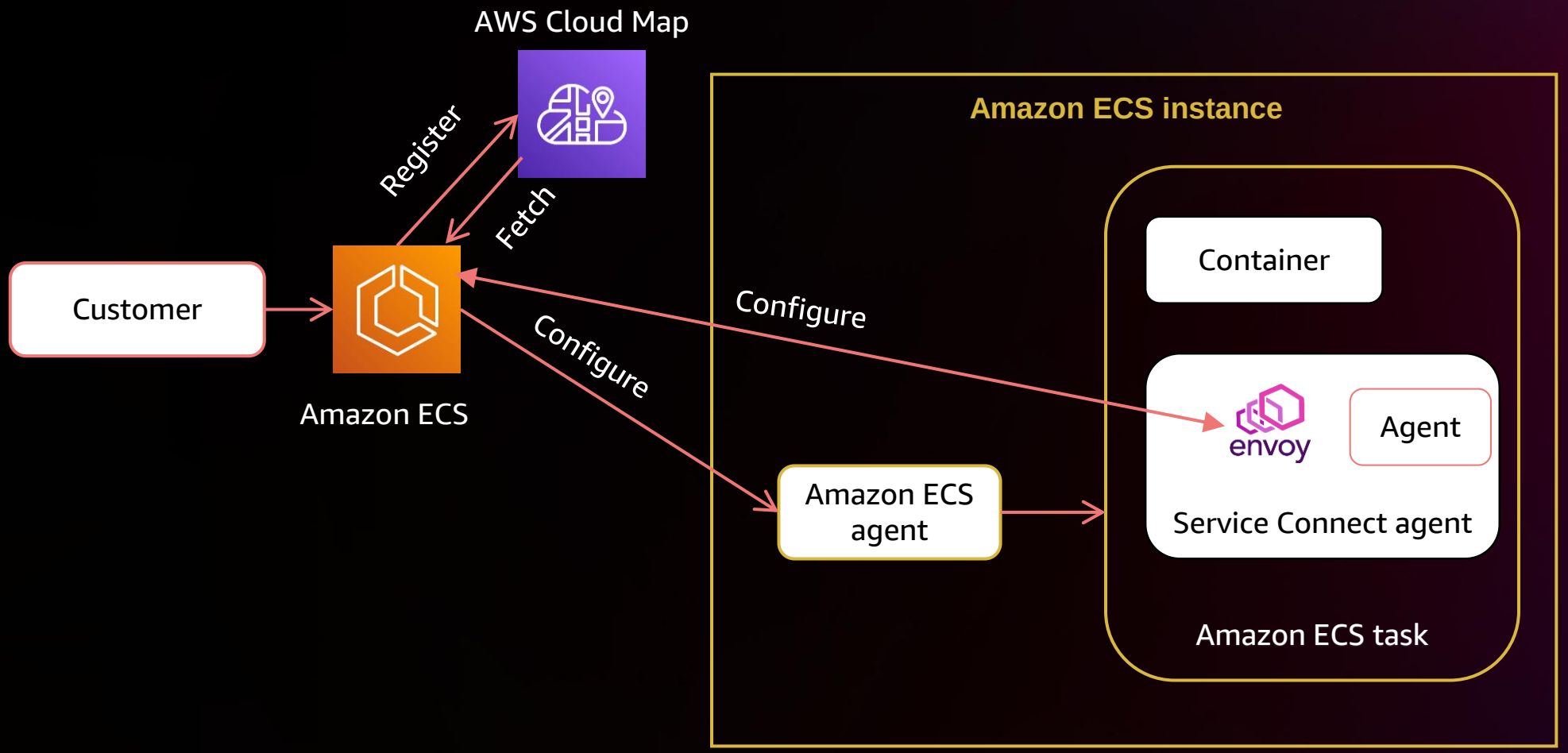
```
"serviceConnectConfiguration": {
        "enabled": true,
        "namespace": ”my-app.local",
        "services": [
        {
                "portName": ”port1",
                "discoveryName": ”backend",
                "clientAliases": [
                {
                        "port": 8080,
                         "dnsName": ”backend”
                } ]
        }
}
```

Customer

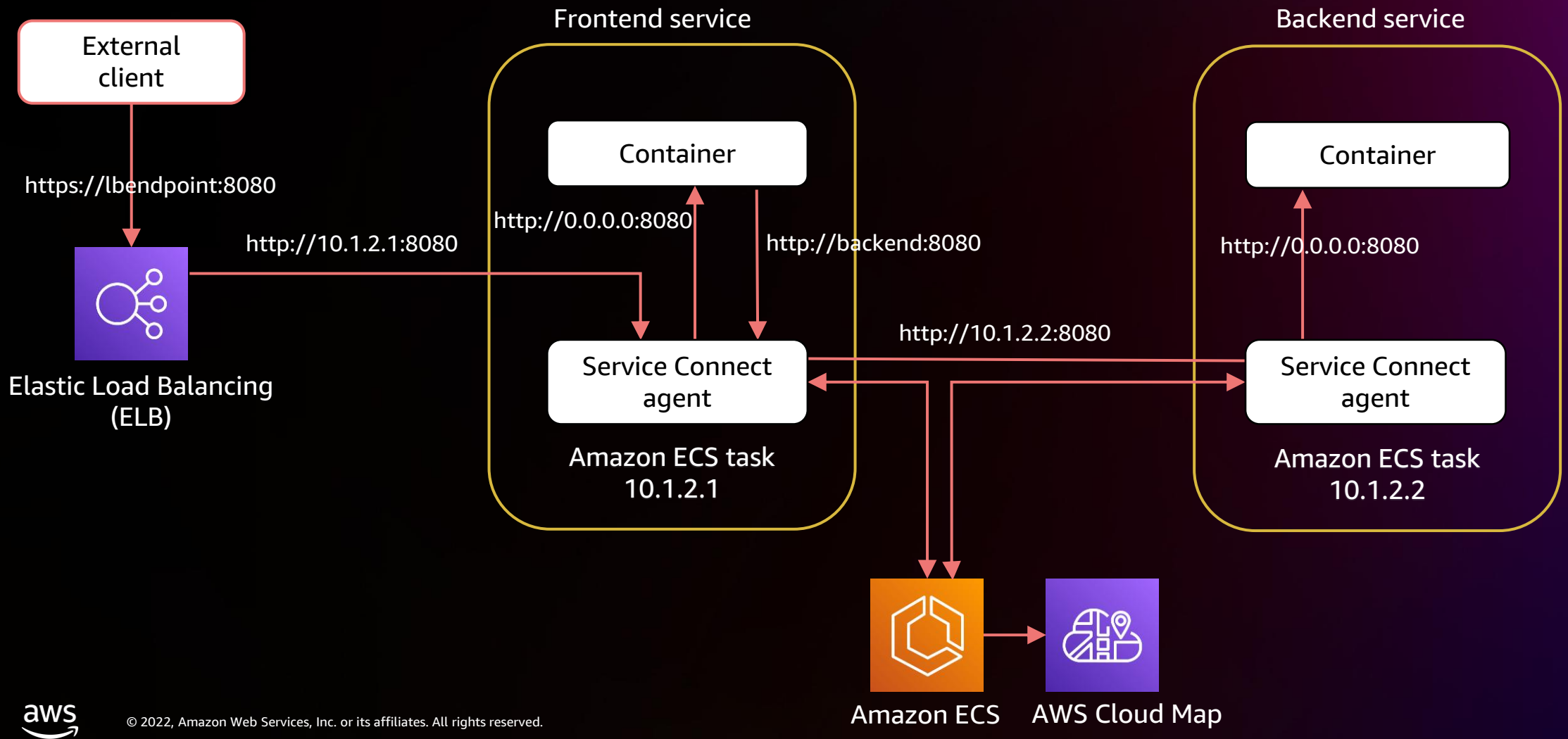
CreateService

Amazon ECS

Create Amazon ECS Service Connect service

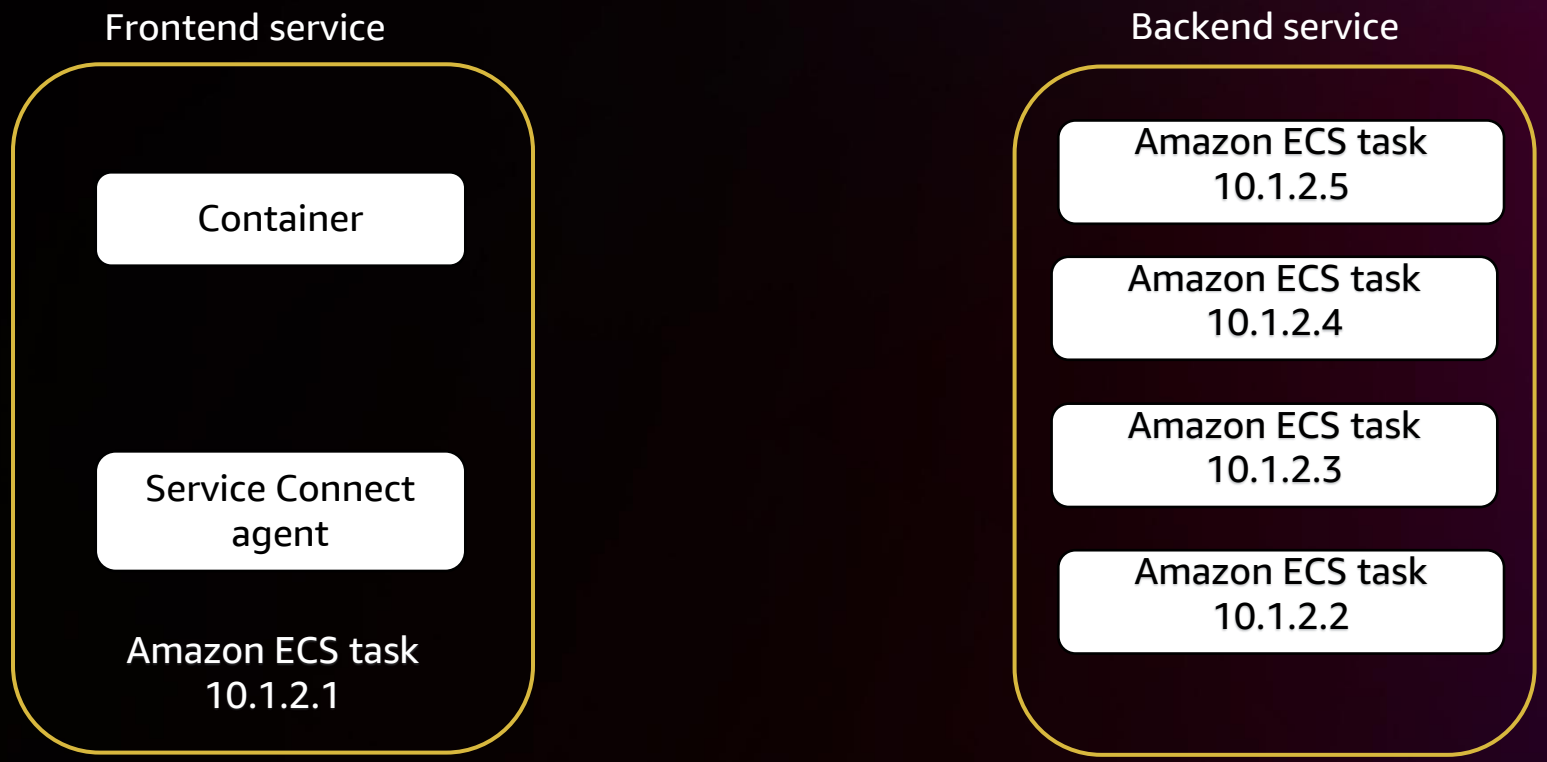


Life of a request with ECS Service Connect

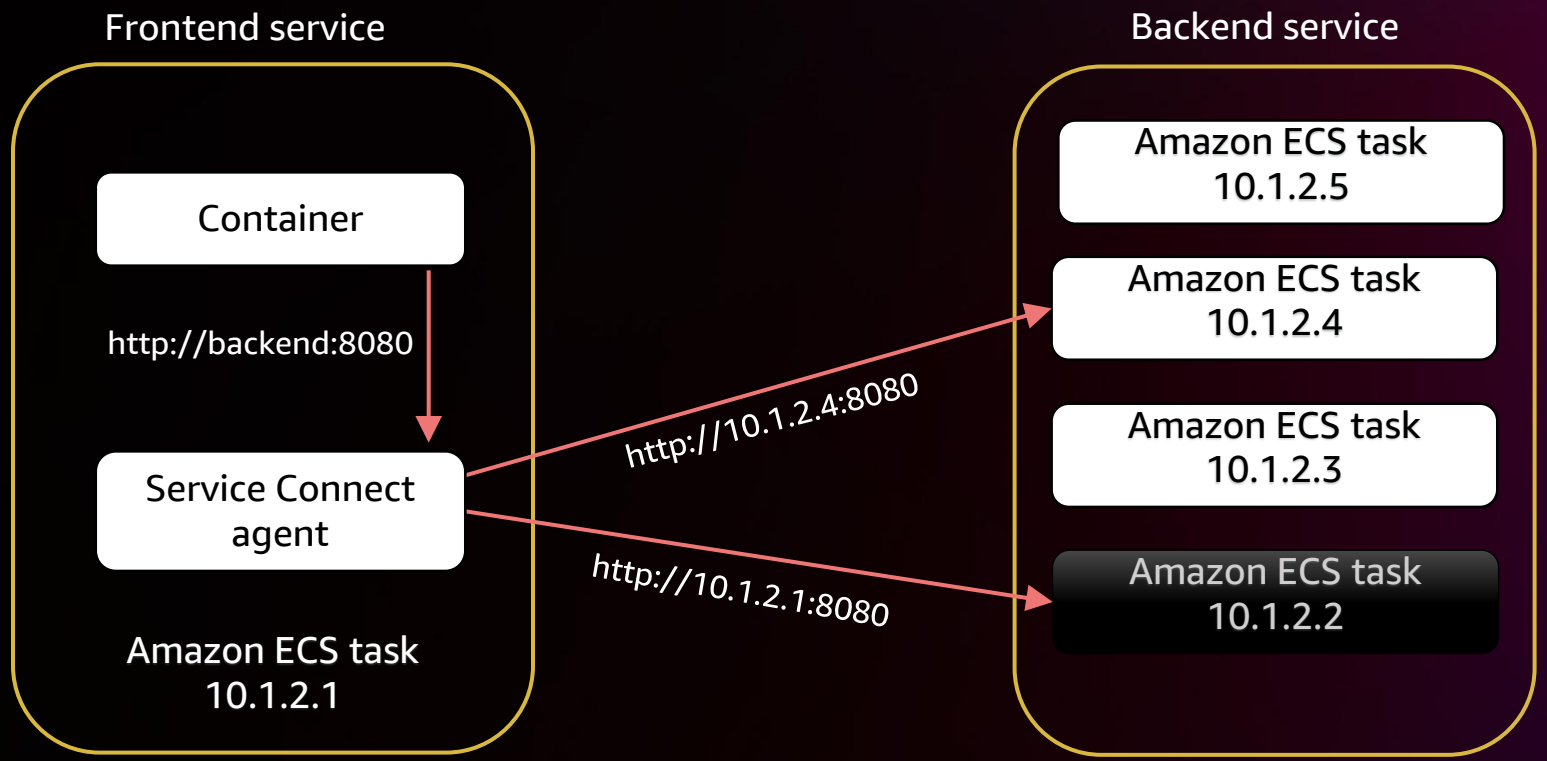


Reliable service-to-service connectivity

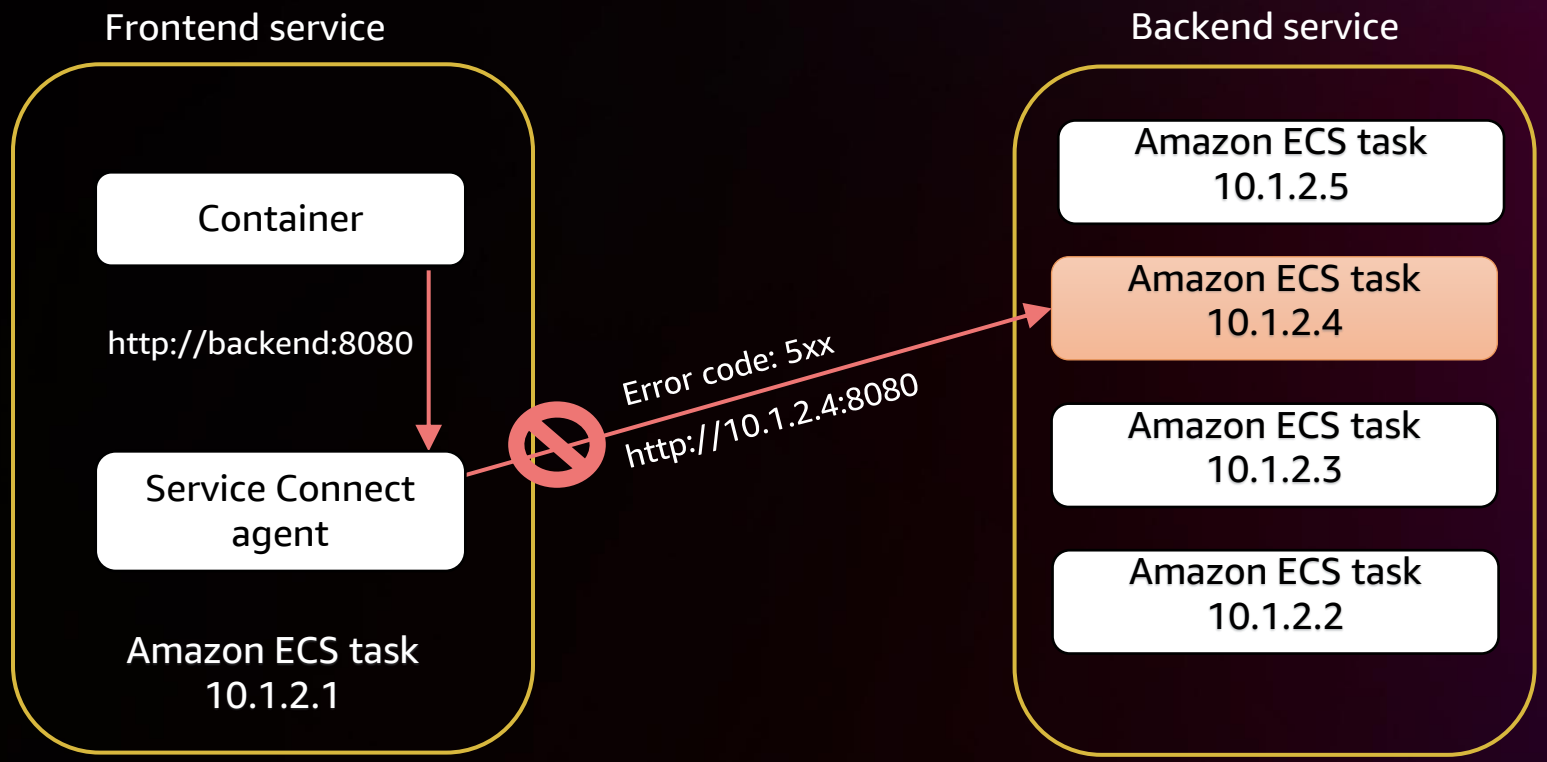
Reliable connectivity – Scenario 1



Reliable connectivity – Scenario 1

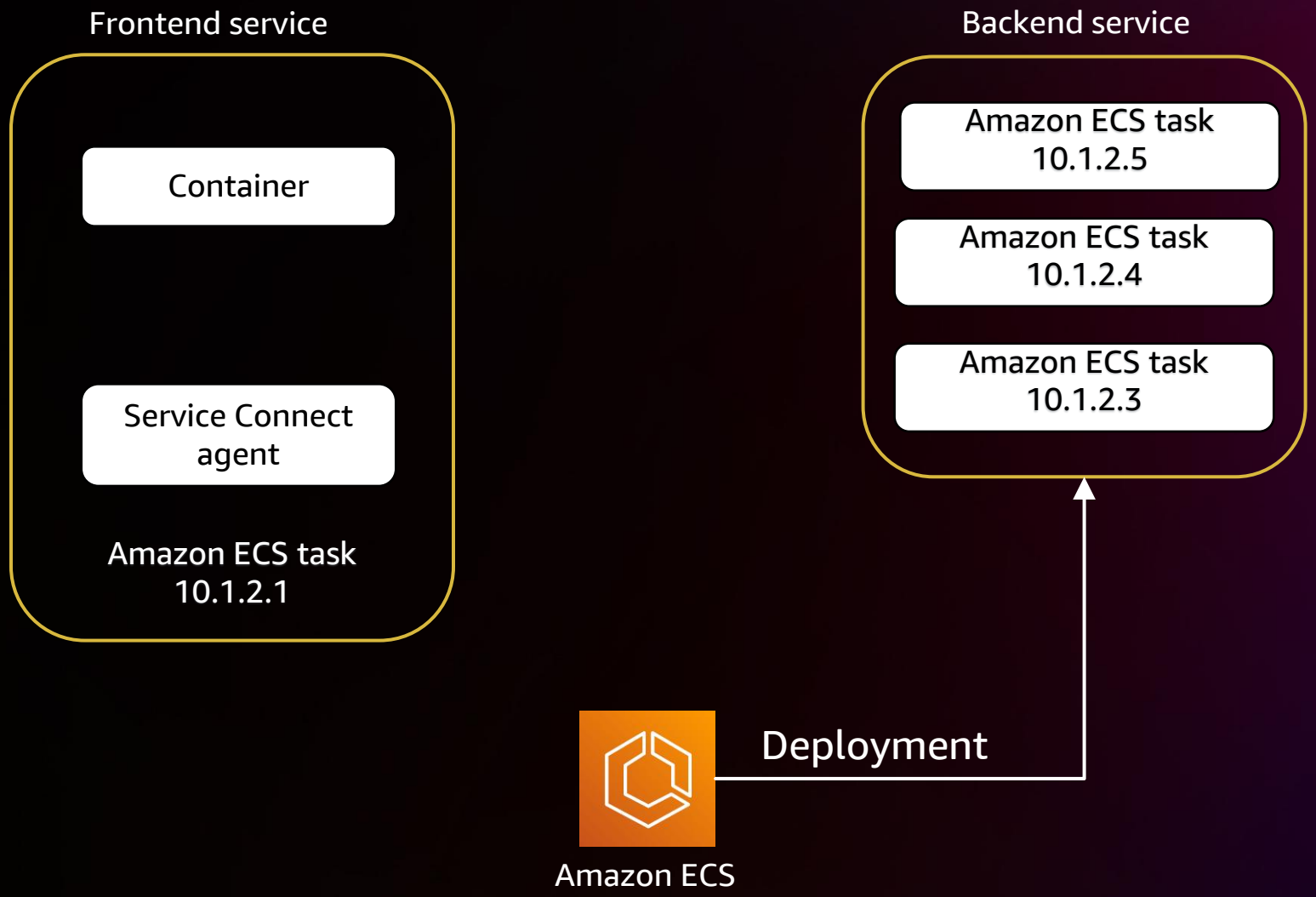


Reliable connectivity – Scenario 2

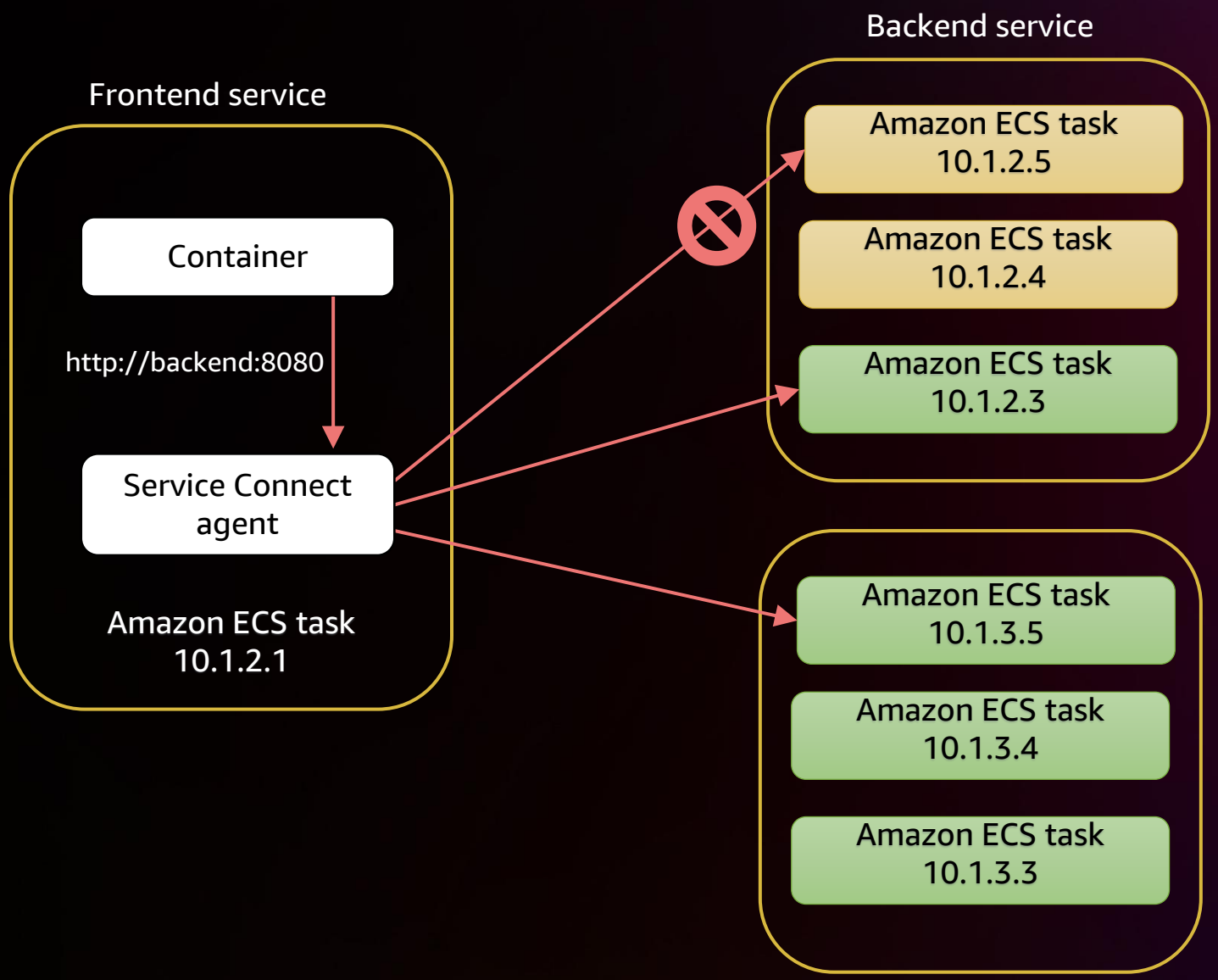


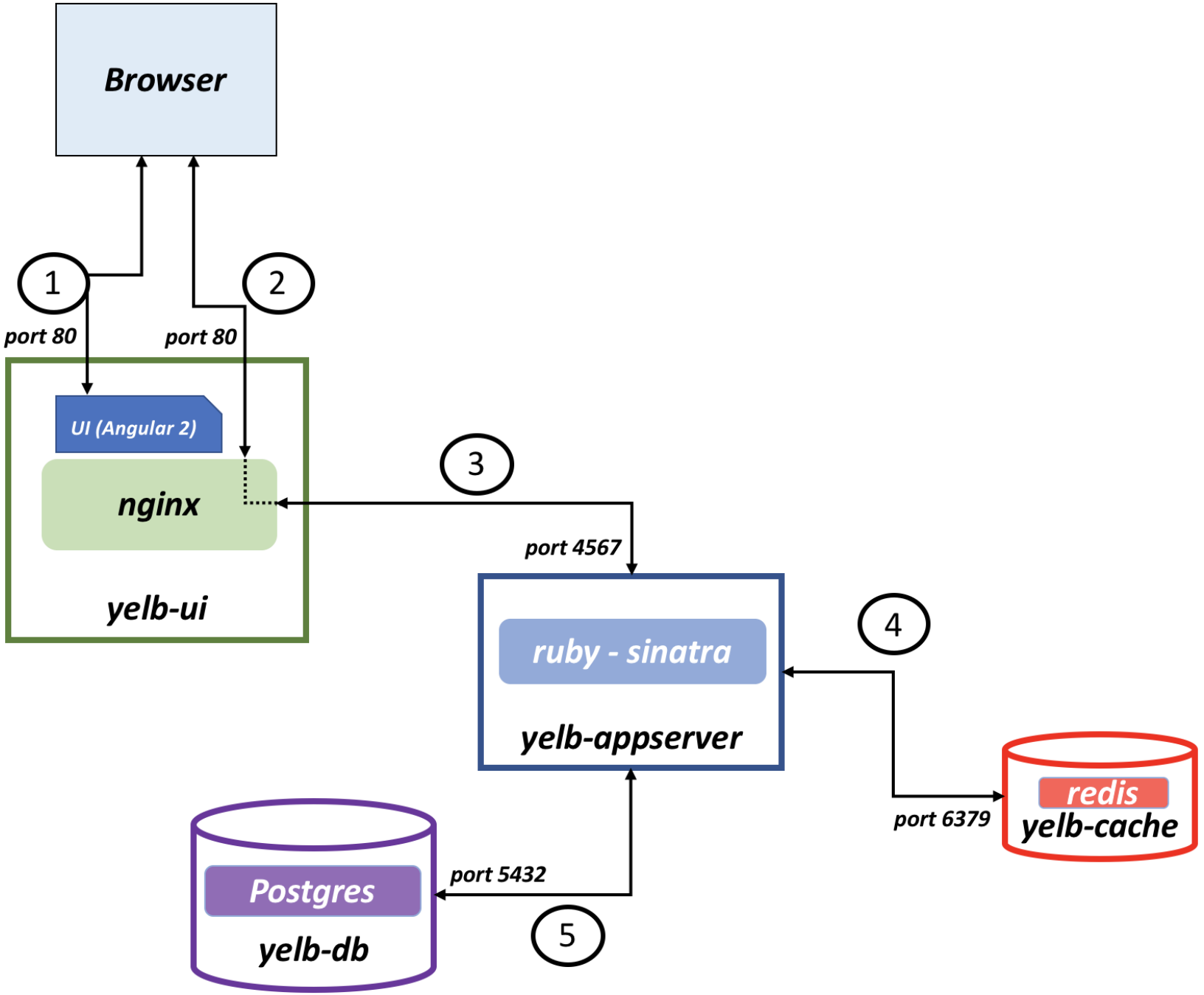
Robust Amazon ECS deployments

Robust deployments



Robust deployments




Browser
1
2
port 80
port 80
UI (Angular 2)
nginx
yelb-ui
3
port 4567
ruby - sinatra
yelb-appserver
4
redis
yelb-cache
port 6379
Postgres
yelb-db
port 5432
5

New ECS Experience
Tell us what you think

Amazon Elastic Container Service

Clusters
Namespaces
Task definitions
Account settings

Amazon ECR
Repositories

Documentation
Discover products
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Service updated: yelb-storage1:yelb-redis

Amazon Elastic Container Service > Clusters > yelb-storage1 > Services > yelb-redis > Deployments

yelb-redis

Edit service | Delete service

Health and metrics | Logs | Configuration and tasks | Deployments and events | Networking | Tags

Deployment configuration

View pipelines

Deployment status	Deployment type	Platform version	Min and max running tasks
Completed	ECS	LATEST	100% min and 200% max

▶ Deployment failure detection

▶ Task placement strategy and constraints

Deployments (1) Info

Filter deployments

1

Start date	Status	Failed tasks	Tasks	Version	Task definition	Revisio
13 minutes ago	Primary 100%	0	1 Running | 0 Pending | 1 Desired	1.4.0	yelb-redis-yelb-storage	1

Pricing and availability

Amazon ECS Service Connect pricing

- Free service discovery and connectivity
- Free traffic telemetry generated by Amazon ECS Service Connect
- You only pay for the compute resources that you use
  - Add 256 CPU units and 64 MiB of memory to your task for the Service Connect container

Available in 22 AWS Regions today

US West (Oregon)

US East (Northern Virginia)

US West (Northern California)

US East (Ohio)

Canada (Central)

South America (São Paulo)

Africa (Cape Town)

Europe (Ireland)

Europe (Frankfurt

Europe (London)

Europe (Paris)

Europe (Stockholm)

Europe (Milan)

Europe (Zurich)

Asia Pacific (Singapore)

Asia Pacific (Tokyo)

Asia Pacific (Seoul)

Asia Pacific (Mumbai)

Asia Pacific (Hong Kong)

Asia Pacific (Osaka)

Asia Pacific (Jakarta)

Australia (Sydney)

Amazon ECS Service Connect general availability

Start using Amazon ECS Service Connect today using:

- Amazon ECS Console
- AWS SDK and AWS CLI
- AWS CloudFormation and AWS Cloud Development Kit (AWS CDK)
- Coming soon – AWS Copilot support
- Terraform
  - Courtesy of Ramesh Mathikumar, Senior DevOps Consultant, AWS

Amazon ECS Service Connect

ADDITIONAL RESOURCES

Learn more about Amazon ECS Service Connect

- **CON303** – Networking, service mesh, and service discovery with Amazon ECS – **Wednesday, Nov. 30, 3:15 PM in Wynn, Level 1, Mouton 2**
- AWS News Blog post – https://aws.amazon.com/blogs/aws/new-amazon-ecs-service-connect-enabling-easy-communication-between-microservices
- Try it out today!

Q&A

Thank you!

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