



AWS
re:Invent

C M P 3 4 6

Deploy & scale a multi-tier application in Amazon Lightsail

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What you will learn

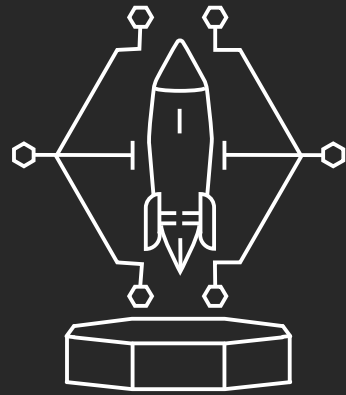
What Amazon Lightsail is

When you should choose Lightsail

How to use Lightsail databases

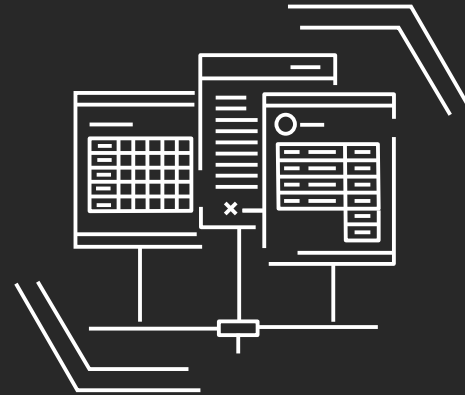
How to use horizontal scaling with snapshots

Amazon Lightsail: Cloud made easy



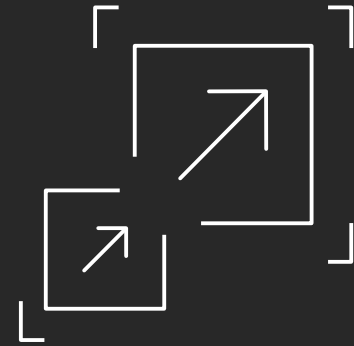
Launch

- Get started in minutes
- Low predictable pricing



Manage

- Intuitive global console
- Robust API and CLI



Grow

- Easily scale your ideas
- Access other AWS services

The application: A simple to-do list

PHP front-end

MySQL backend

Phase 1:

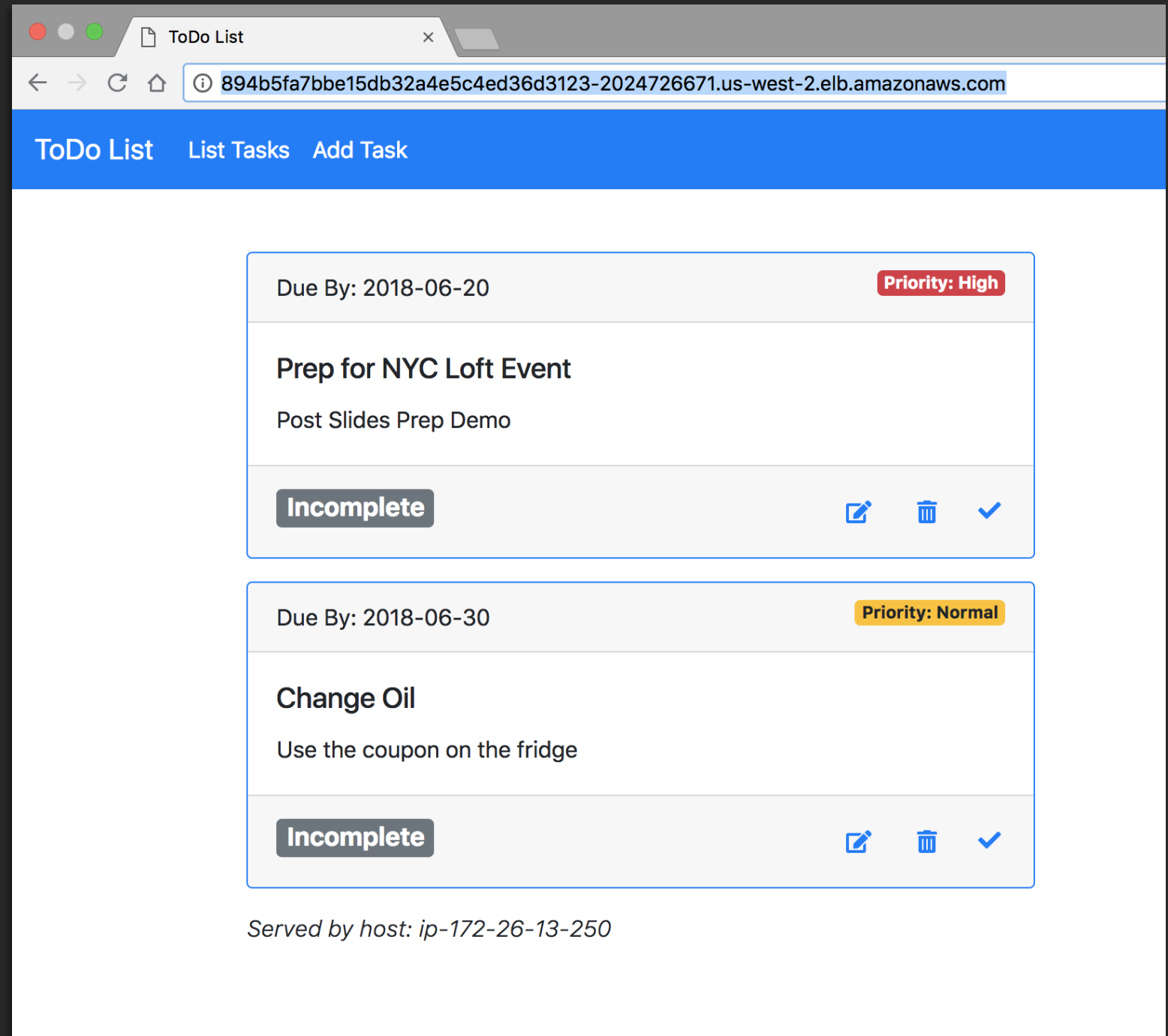
- Deploy app into a single Lightsail instance

Phase 2:

- Implement a Lightsail database

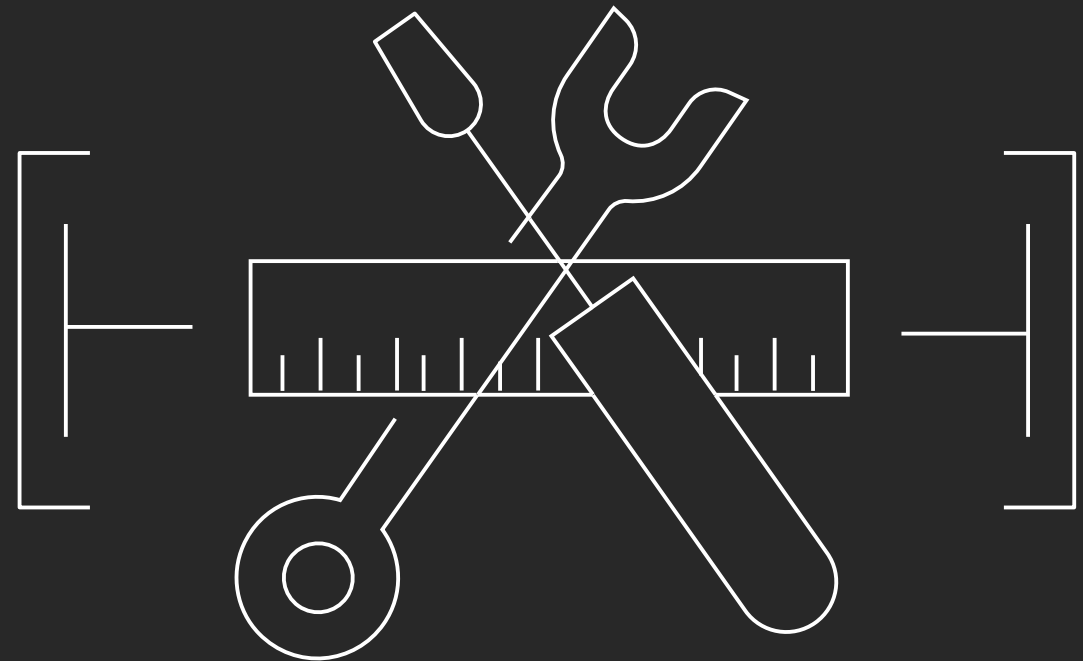
Phase 3:

- Scale the web front-end

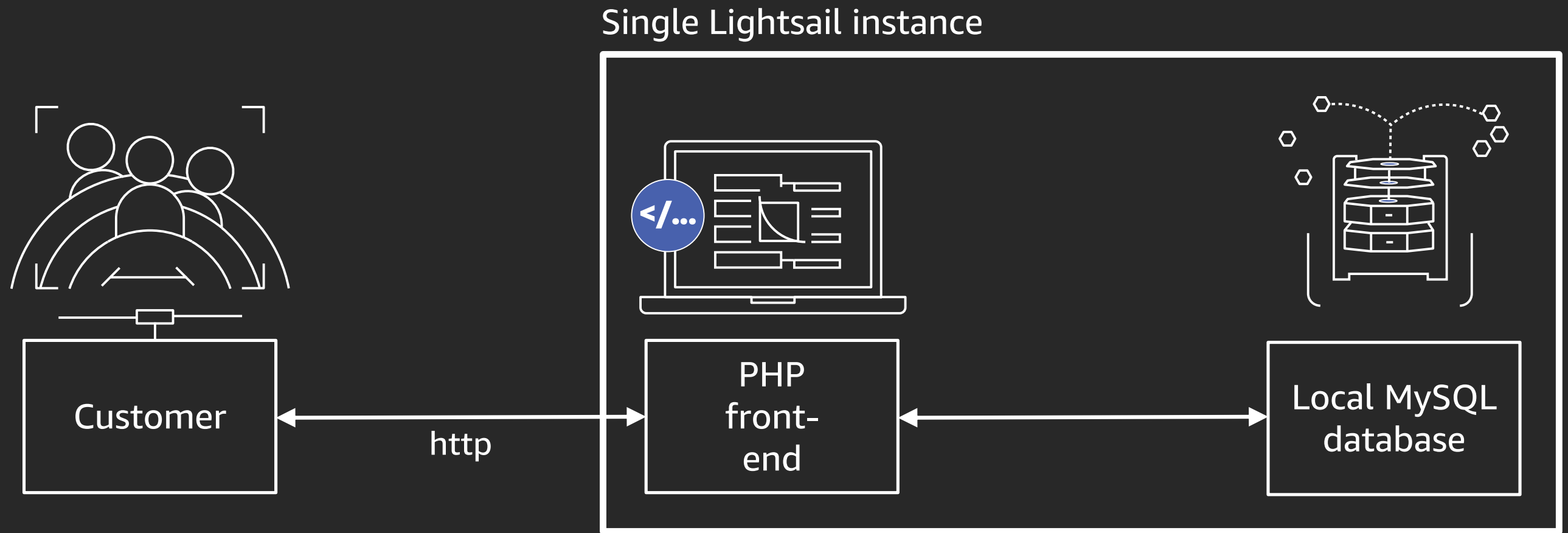


Getting your Phase 1 application running

1. Create Lightsail instance
2. Clone GitHub repo
3. Configure database connectivity



Application architecture – Phase 1



Refining your application

Potential issues:

Single point of failure

Responding to increasing demand

Database/web front end tied closely together

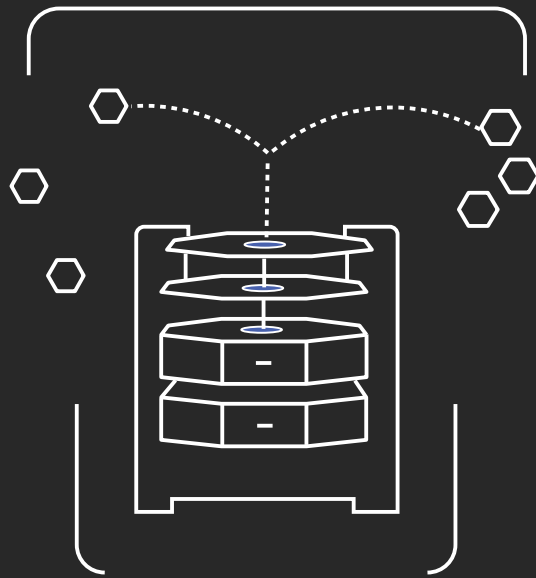
Solution:

Separate database/web front end

Create multiple front end instances

Add a Lightsail load balancer

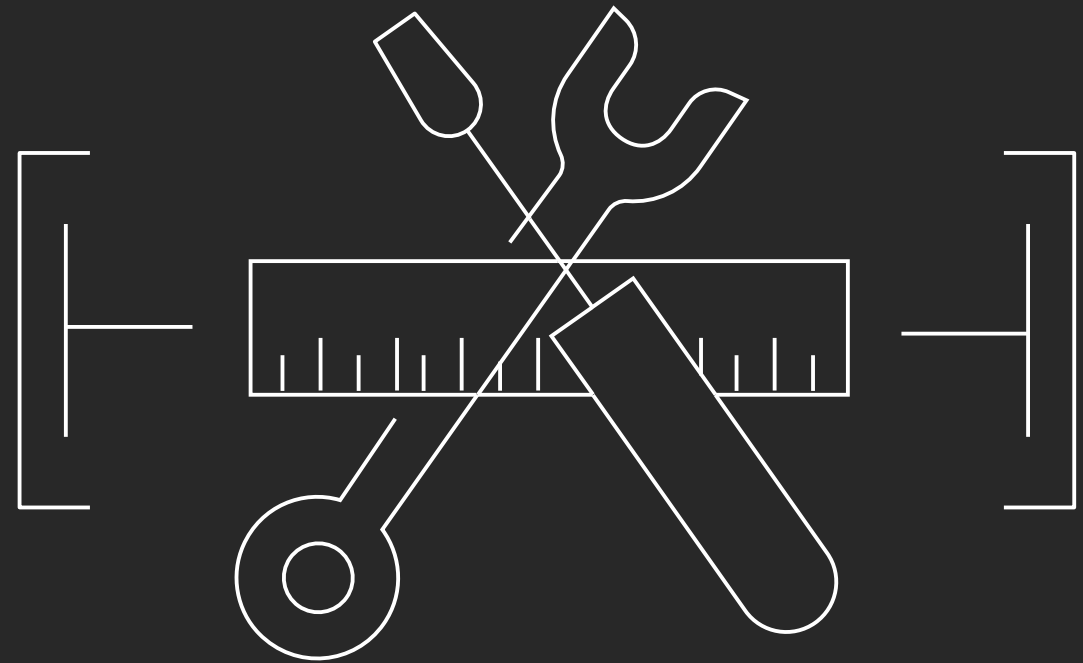
Lightsail databases



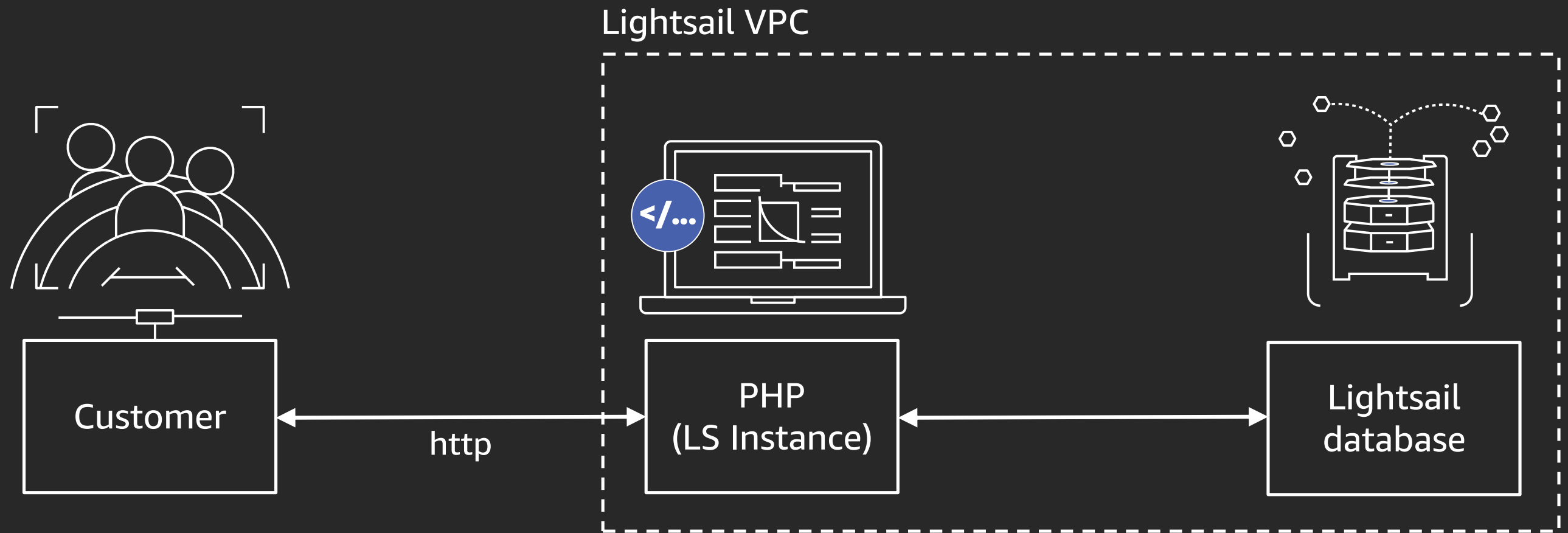
- Easy to create and manage MySQL databases
- Standard and high availability options
- Four instance sizes to choose from
- Public and private access
- Automated backups
- Fully managed—no need to manage/patch underlying system

Getting your Phase 2 application running

1. Create Lightsail database
2. Reconfigure the front end to point at the new Lightsail database



Application architecture – Phase 2



Horizontal scaling with snapshots

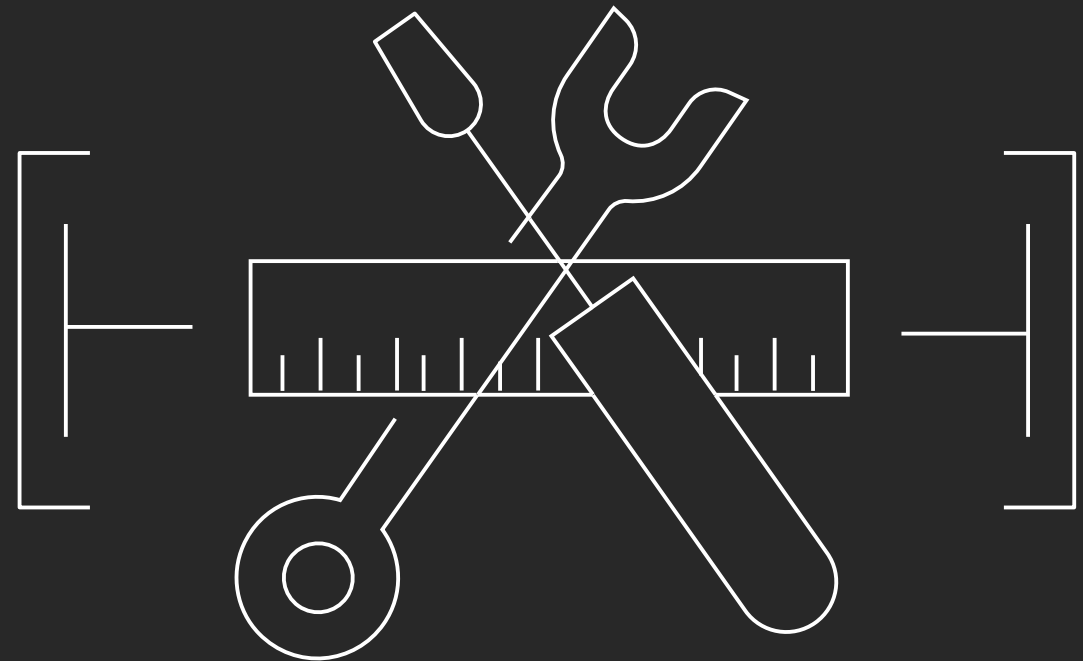
- Snapshots are point-in-time backups
- Can be used to:
 - Move a server to a new AWS Region
 - Move a server to Amazon EC2
 - Upsize an existing server
 - *Replicate an existing server*

Lightsail load balancers

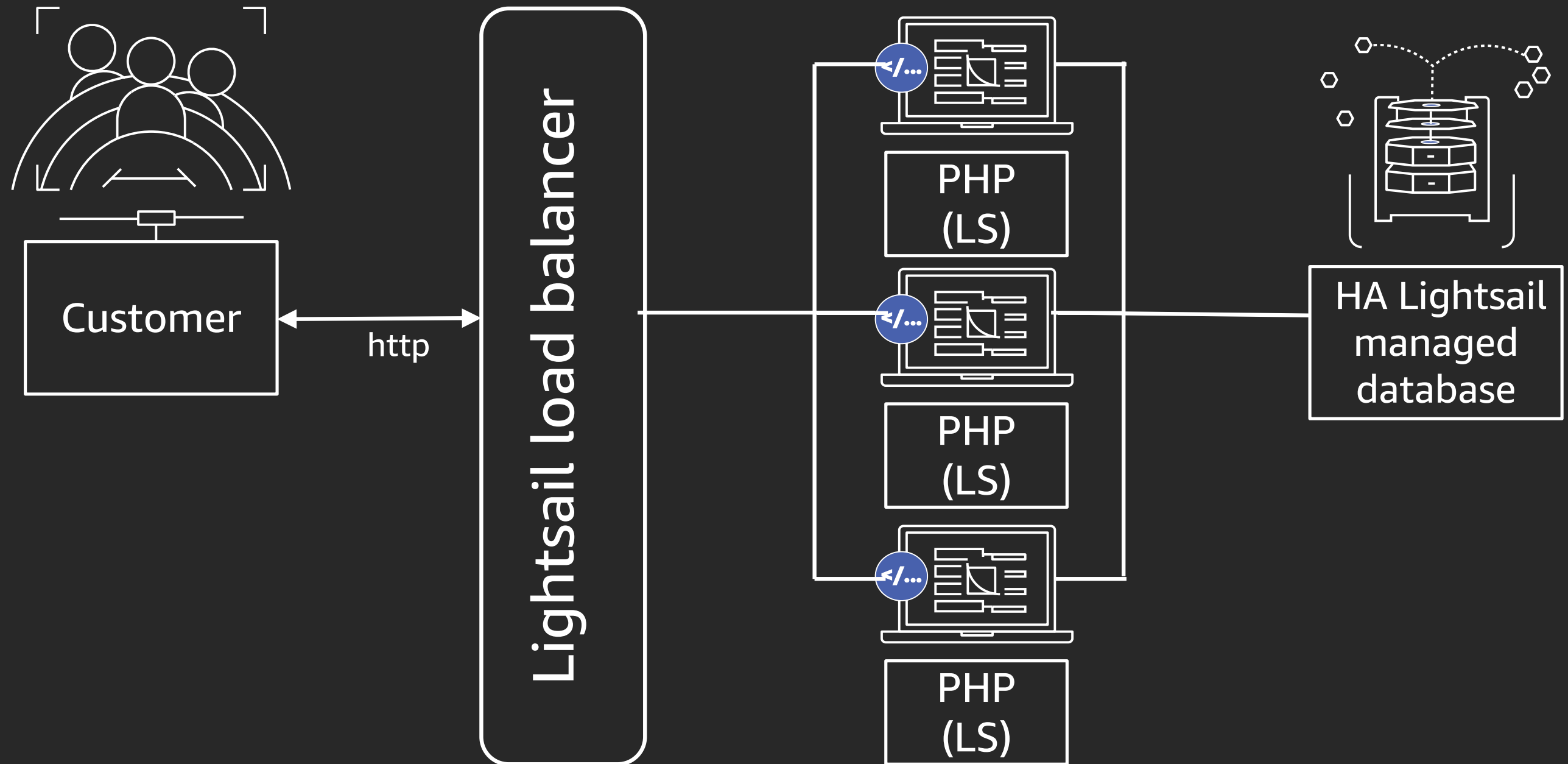
- Simplified Amazon load balancer implementation
- Set up in a few clicks
- Easy SSL certs
- Handles http/https traffic
- Balances across ports 80 and 443

Getting your Phase 3 application running

1. Create a Lightsail load balancer
2. Snapshot the web front end
3. Deploy two new instances from the snapshot
4. Place all three front-end instances behind the load balancer
5. Optional: If you have a domain you manage, create a cname record for the load balancer



Application architecture - Phase 3



Resources

<https://github.com/mikegcoleman/todo-php> ← The application

<https://scale.lightsailworkshop.com> ← Step-by-step walkthrough

Thank you!

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