AWS re:Invent

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Application deployment strategies for AWS applications

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Agenda

- What is a deployment strategy?
- All at once
- Rolling update
- Blue/green
- Canary

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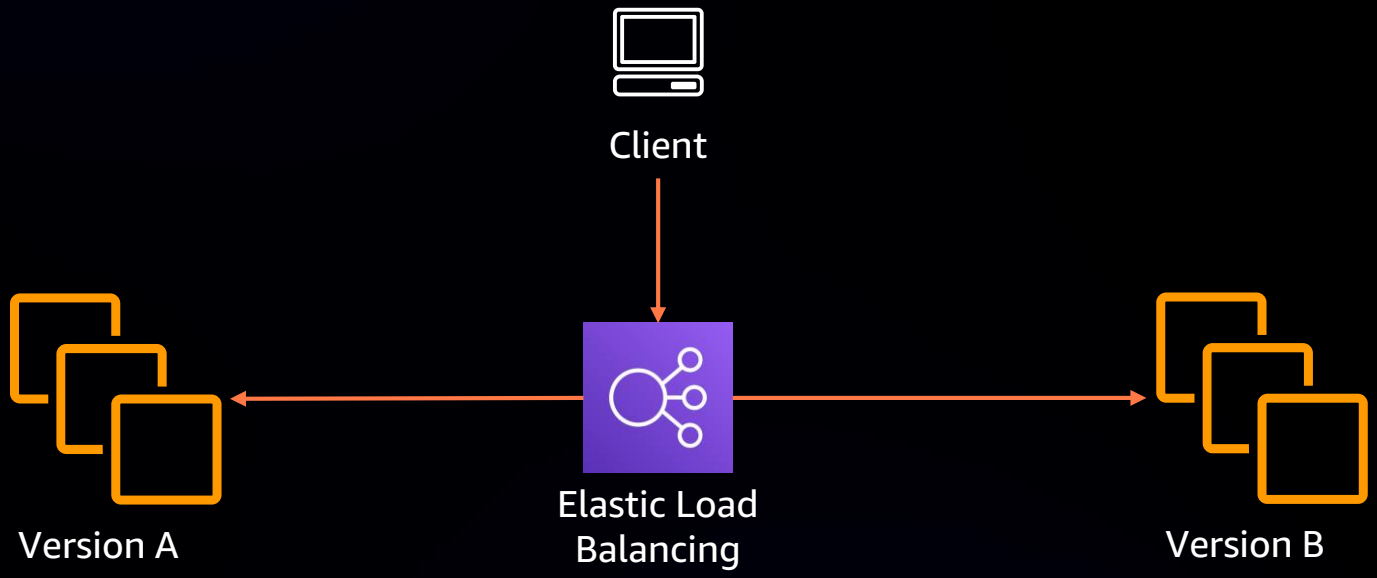
Deployment strategy

A deployment strategy is a way to change or upgrade an application. The aim is to make the change without downtime in a way that the users barely notice the changes

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All at once

Version A is terminated, then version B is rolled out



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All at once

Advantages

- Fast deployment
- Fast rollback
- No extra infrastructure to maintain
- Single version running at a given time

Disadvantages

- Downtime
- No real production traffic testing before deploying

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All at once

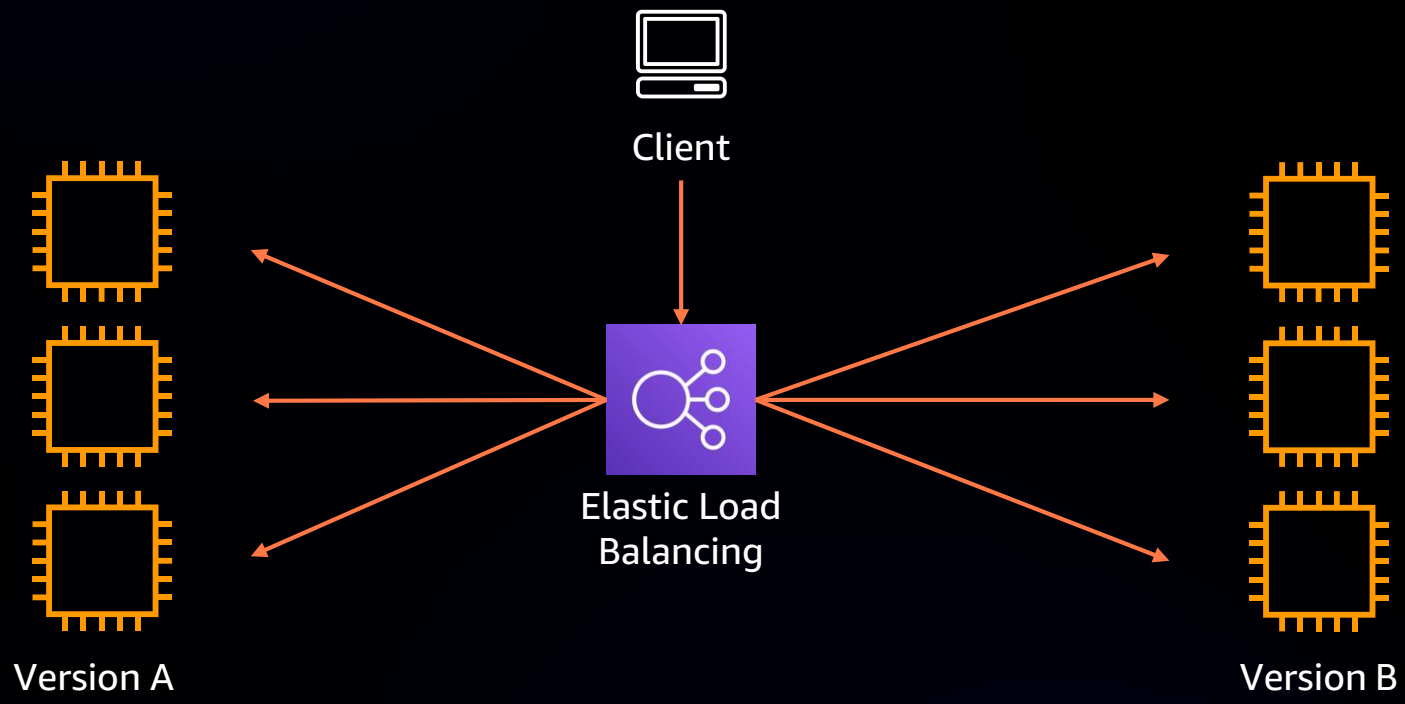
Can be performed using

- AWS CodeDeploy
- AWS Elastic Beanstalk
- AWS CloudFormation
- Third-party tools

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Rolling update

Version B is slowly rolled out and replaces version A



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Rolling update

Advantages

- No downtime

Disadvantages

- Slow deployment
- Slow rollback
- No real production traffic testing before deploying
- Can require extra infrastructure for surge updates

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Rolling update

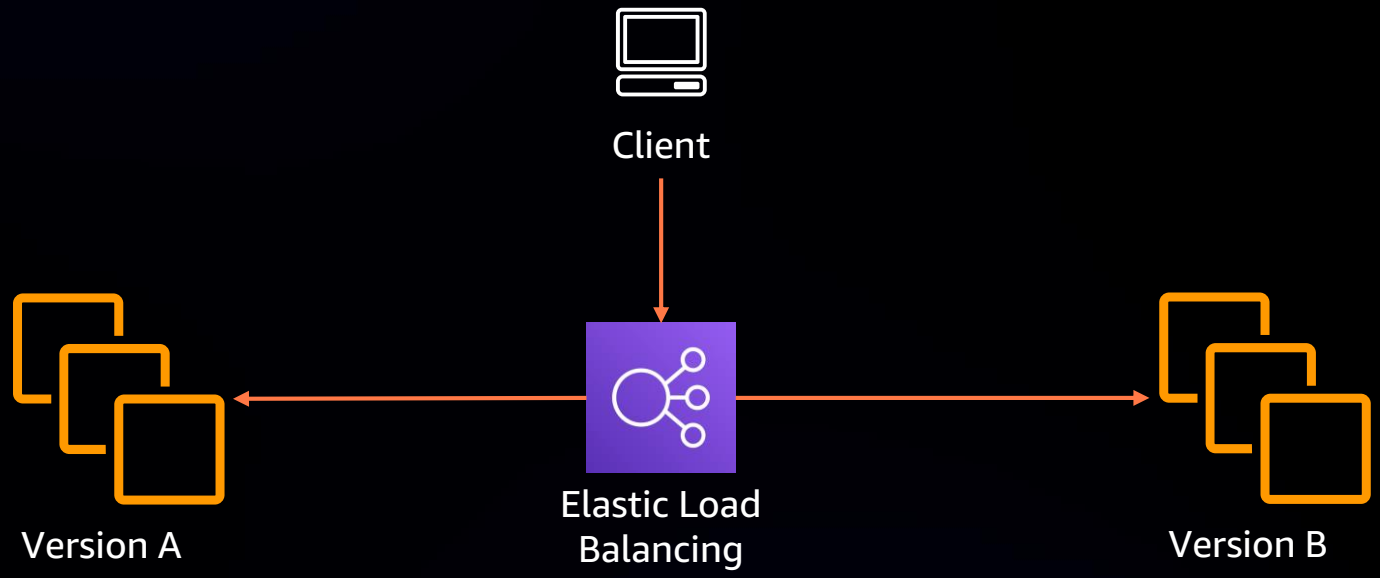
Can be performed using

- AWS CodeDeploy
- AWS Elastic Beanstalk
- Amazon Elastic Container Service
- Amazon Elastic Kubernetes Service
- Third-party tools

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Blue/green

Version B is released alongside A, and then the traffic is switched to version B



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Blue/green

Advantages

- Fast deployment
- Fast rollback
- No downtime

Disadvantages

- Duplicated infrastructure
- No real production traffic testing before deploying

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Blue/green

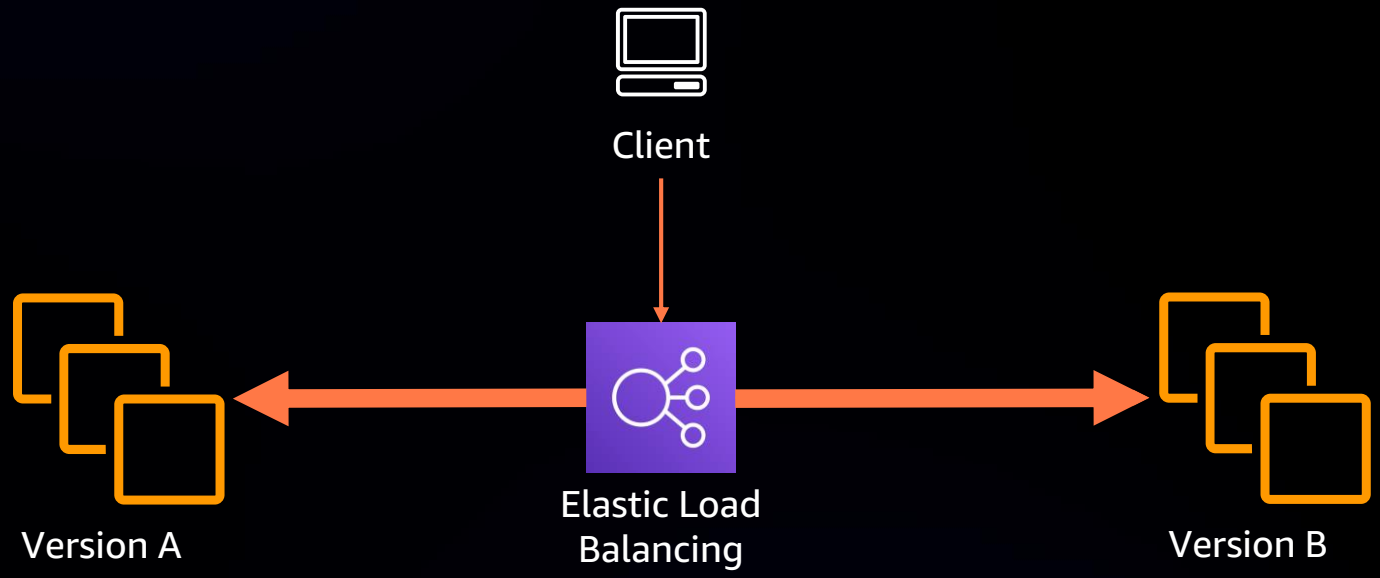
Can be performed using

- AWS CodeDeploy
- AWS Elastic Beanstalk
- Amazon Elastic Container Service
- Amazon API Gateway
- Third-party tools

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Canary

Version B is released to a subset of users and then proceed to a full rollout



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Canary

Advantages

- Fast deployment
- Fast rollback
- No downtime
- Production traffic testing before deploying

Disadvantages

- Requires extra orchestration
- Requires extra infrastructure

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Canary

Can be performed using

- AWS CodeDeploy
- AWS Elastic Beanstalk (with traffic splitting)
- Amazon Elastic Container Service
- Amazon API Gateway
- AWS Lambda
- Third-party tools

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Comparison

Deployment or testing pattern	Zero downtime	Real production traffic testing	Rollback duration	Impact on hardware and cloud costs
All at once Version 1 is terminated, and version 2 is rolled out			Fast but disruptive because of downtime	No extra setup required
Rolling update Version 2 is gradually rolled out and replaces version 1	✓		Slow	Can require extra setup for surge upgrades
Blue/green Version 2 is released alongside version 1; the traffic is switched to version 2 after it is tested	✓		Instant	Need blue and green environments simultaneously
Canary Version 2 is released to a subset of users, followed by a full rollout	✓	✓	Fast	Need default and canary environments simultaneously

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Thank you!

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