PART 6

Introduction

Continuous Integration

Infrastructure + CDNs

Image Media

Quick revision

Quick revision

What is Git?

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- Version control system that records all changes

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What does Git stand for?

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What does Git stand for?

- No-one really knows

Quick revision

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What are some of the principles of Agile?

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What are some of the principles of Agile?

- Customer satisfaction from frequent delivery
- Welcome changing requirements
- Close co-operation of all units of the business
- Regular team reflection for impovement

Introduction

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- The delivery and infrastructure patterns we use represent those currently applied by the biggest online publishers

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- The driver is performance, cost and also the agile methodology

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In a nutshell

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- Continuous integration (CI) refers to the practice of integrating developer work into the mainline regularly

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- With each integration the system is built and, if tests all pass, is ready for deployment

CI as a concept vs CI the server

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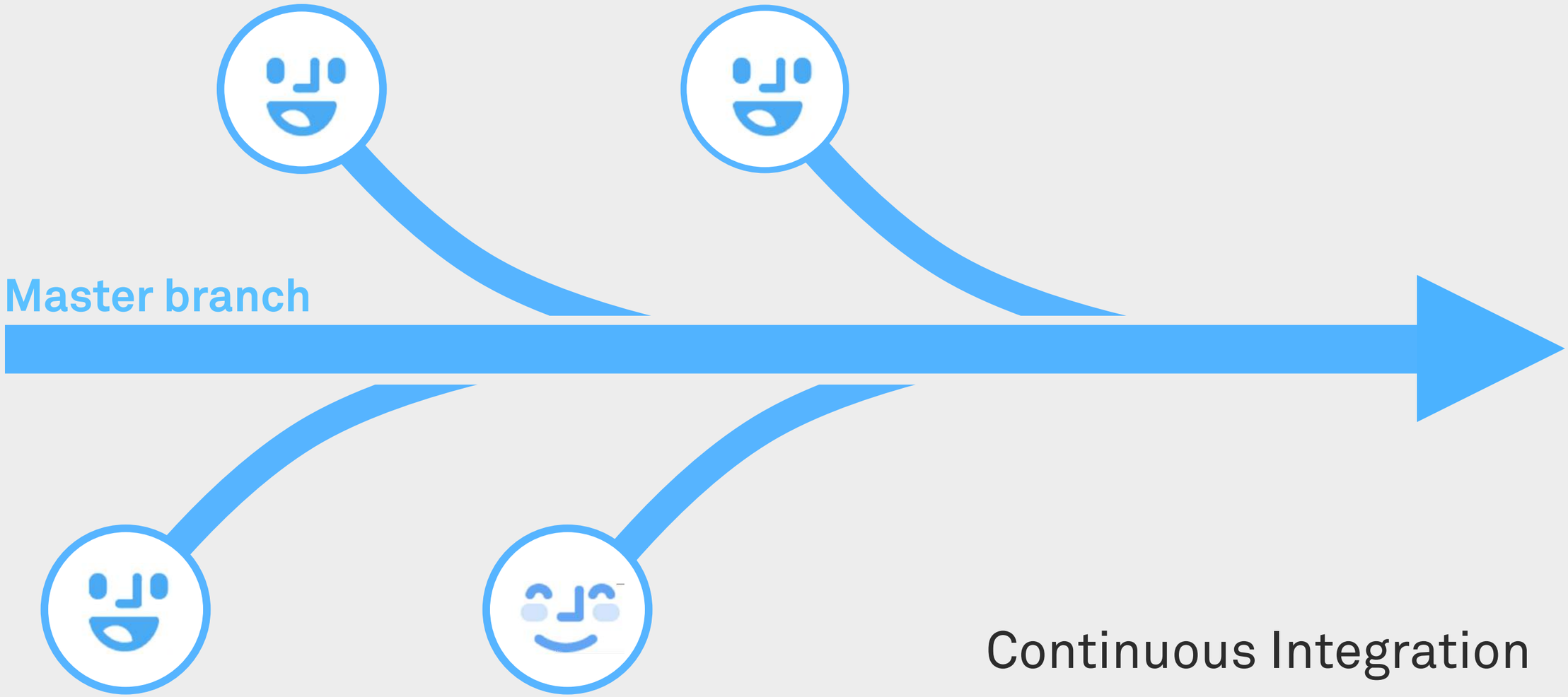
- The CI concept shouldn’t be confused with our CI server that everyone talks about

CI as a concept vs CI the server

- The CI concept shouldn’t be confused with our CI server that everyone talks about
- Usually when someone mentions CI they’re talking about something that’s going on with the TeamCity CI server



Continuous Integration

CI Server

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- The CI server refers to the deployment pipeline of the application, from test all the way to production

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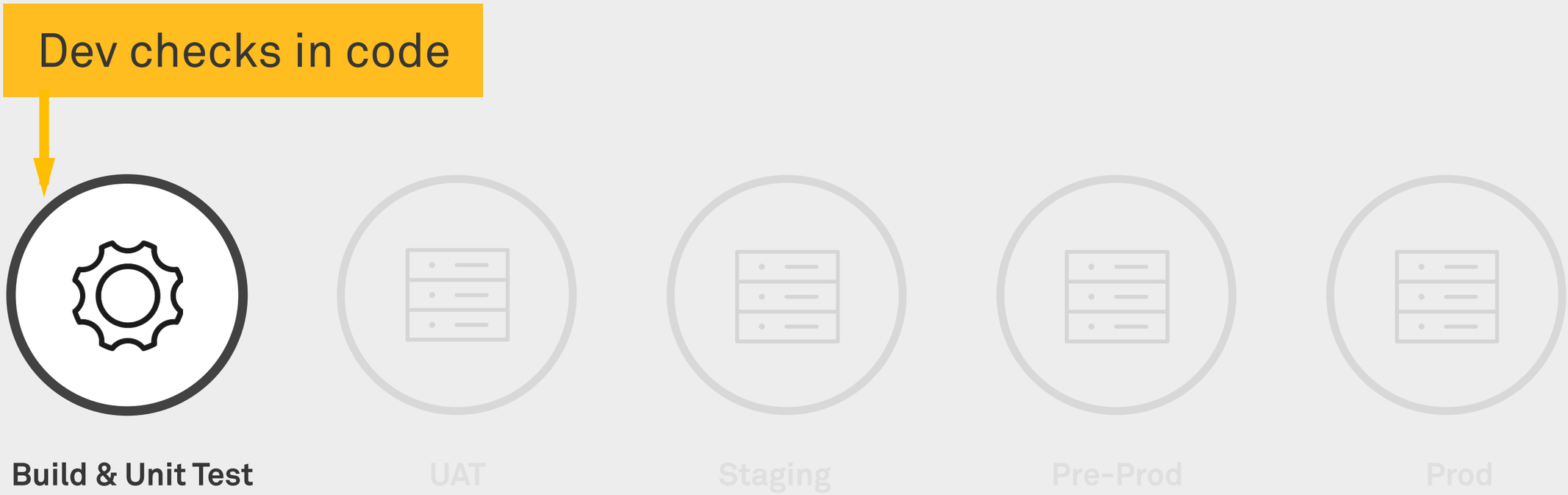
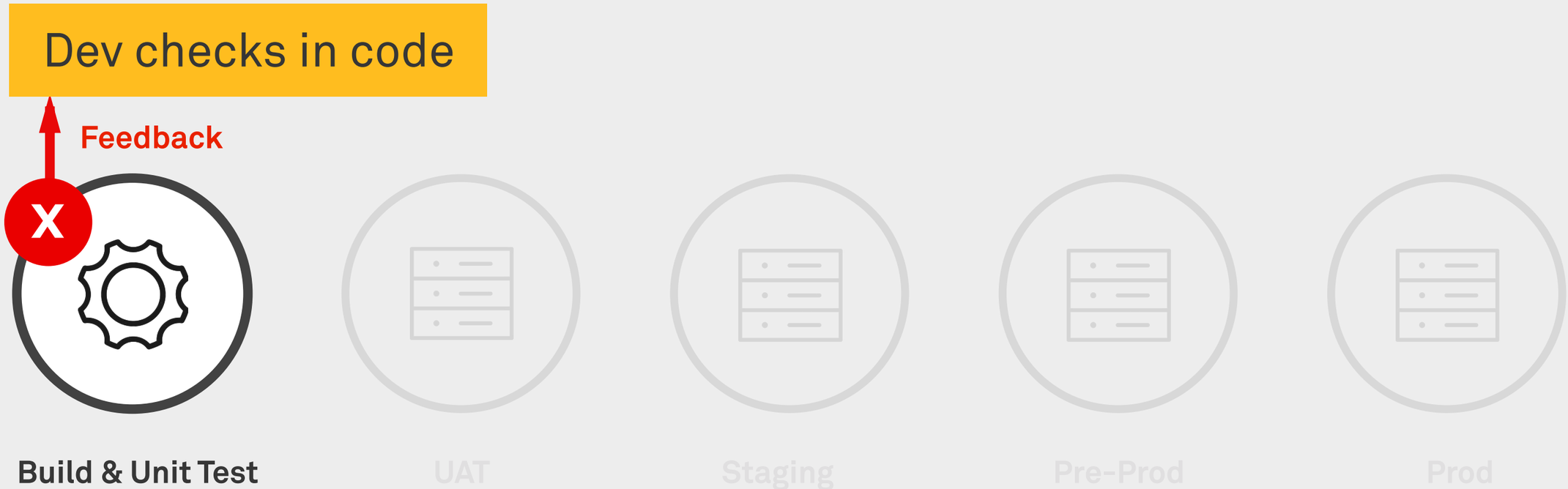
- The CI server refers to the deployment pipeline of the application, from test all the way to production
- Related to the concept of continuous integration is ‘continuous deployment’ which marries the agile concept of short release cycles.

Build & Unit Test
UAT
Staging
Pre-Prod
Prod


Dev checks in code
Build & Unit Test
UAT
Staging
Pre-Prod
Prod



Scenario 1: Build / Unit Tests fail

Scenario 2: Build / Unit Tests Pass

Dev triggers UAT deploy

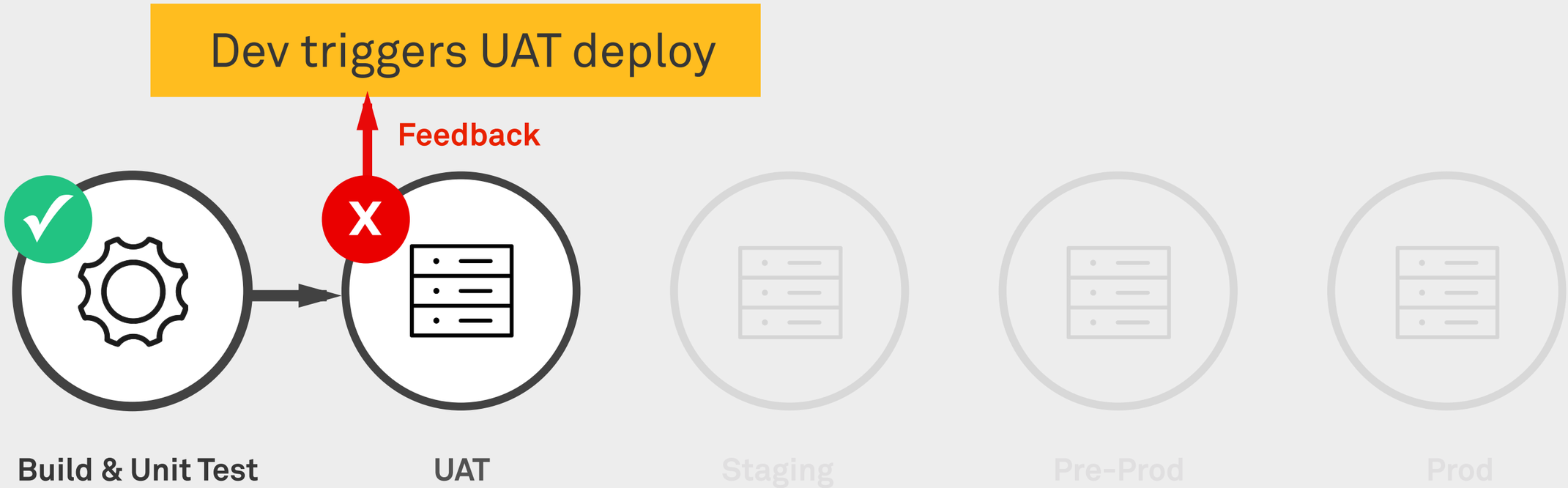
Build & Unit Test

UAT

Staging

Pre-Prod

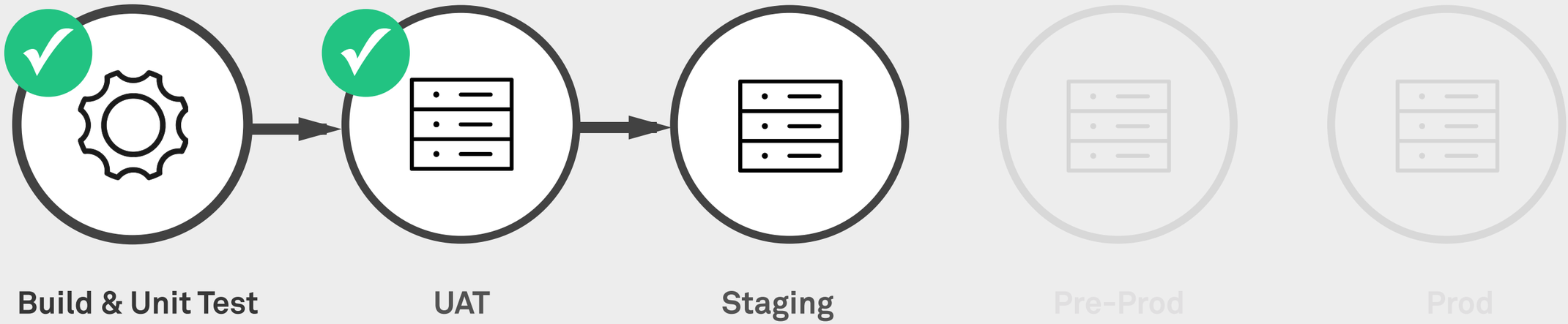
Prod

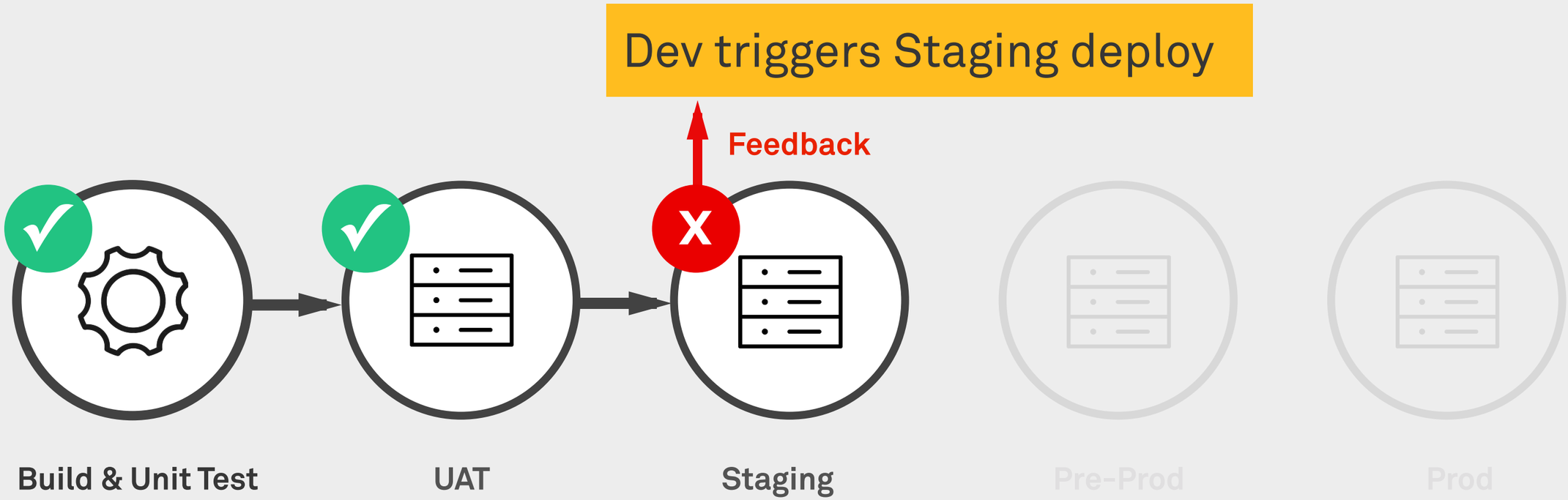


Scenario 1: Deploy fails

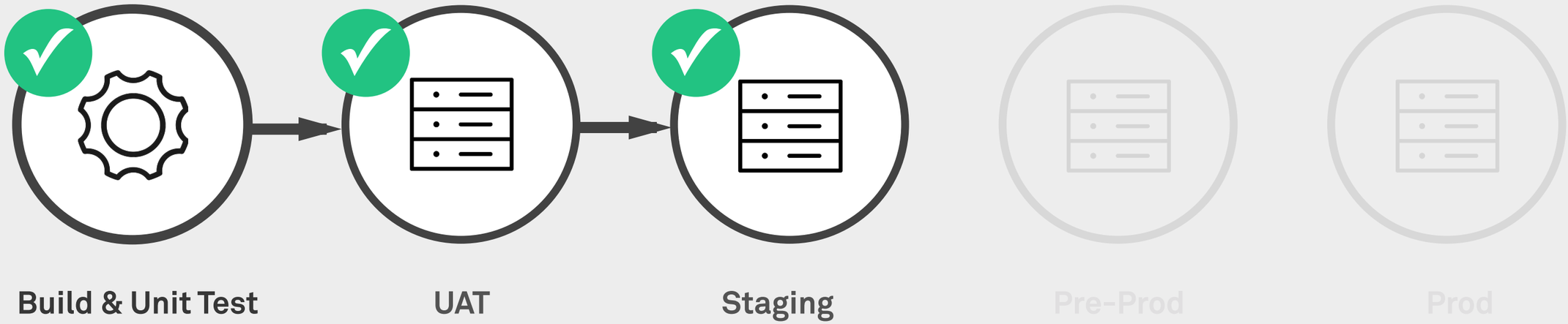
Scenario 2: Deploy succeeds

Dev triggers Staging deploy



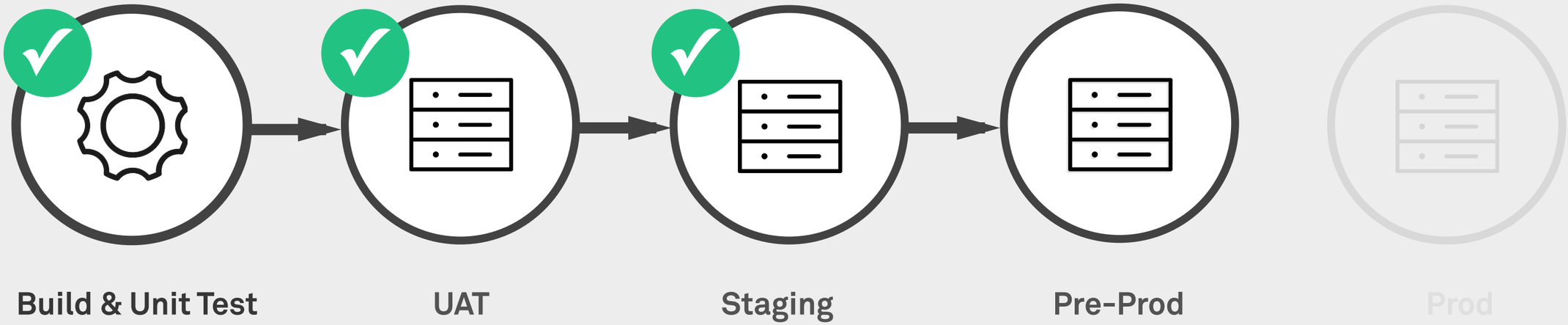


Scenario 1: Deploy fails

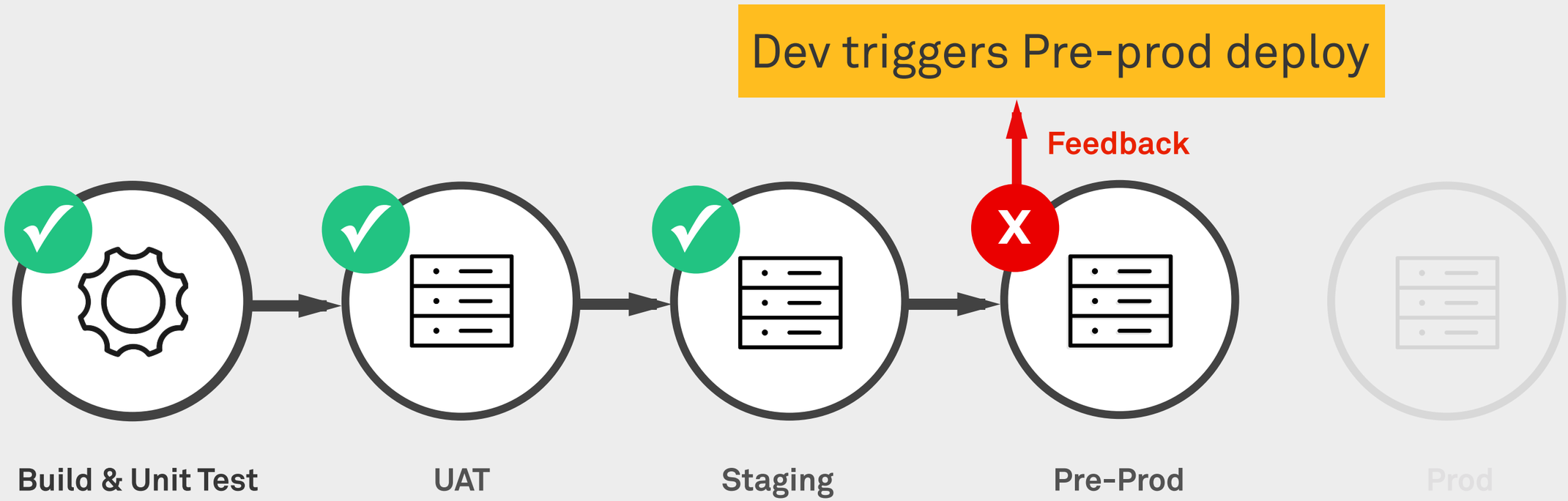


Scenario 2: Deploy succeeds

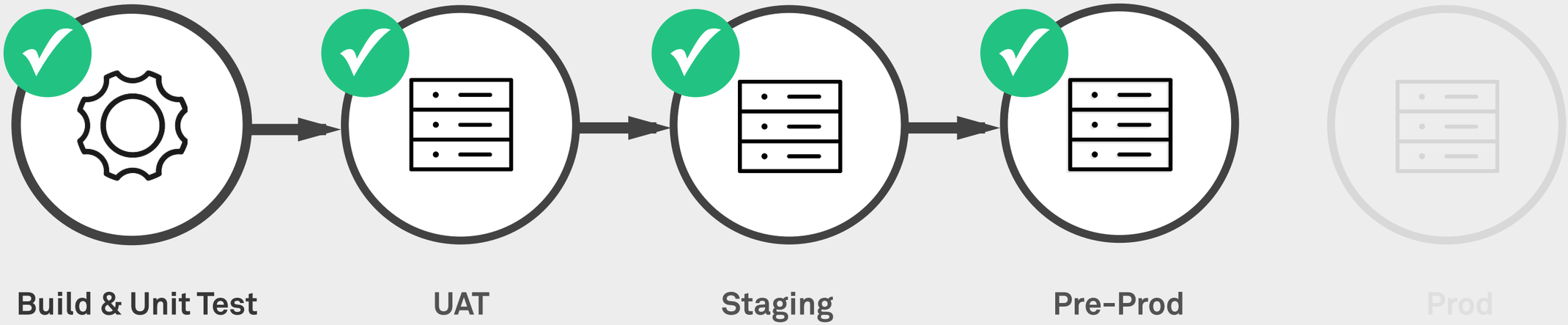
Dev triggers Pre-prod deploy



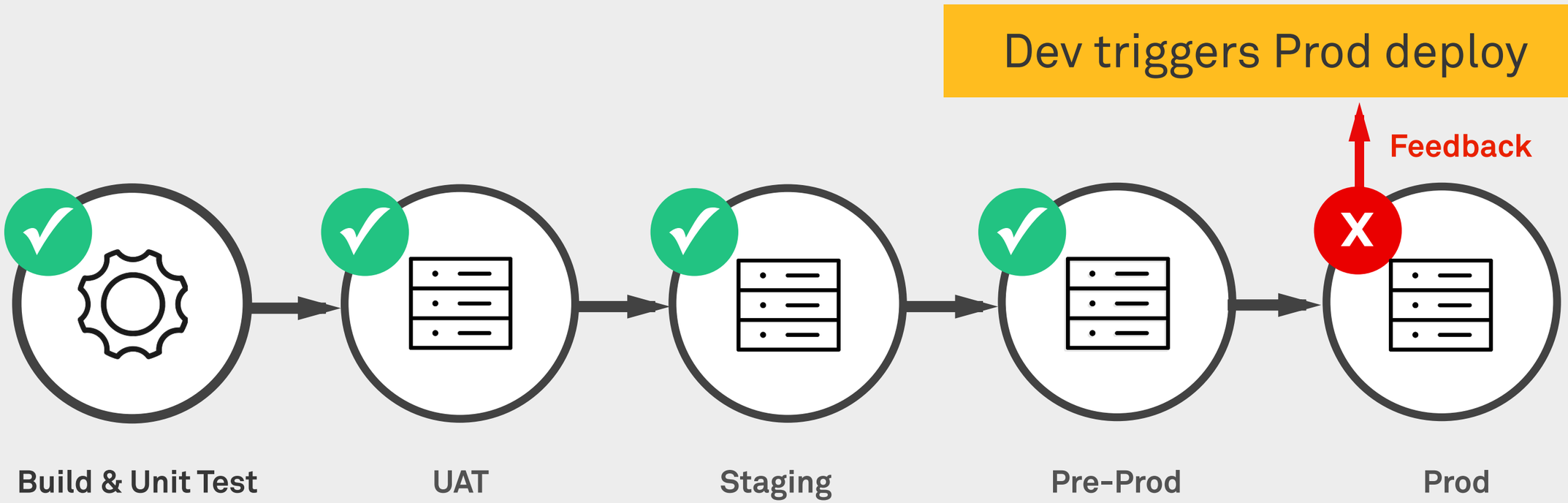
Scenario 1: Build fails



Scenario 1: Deploy fails

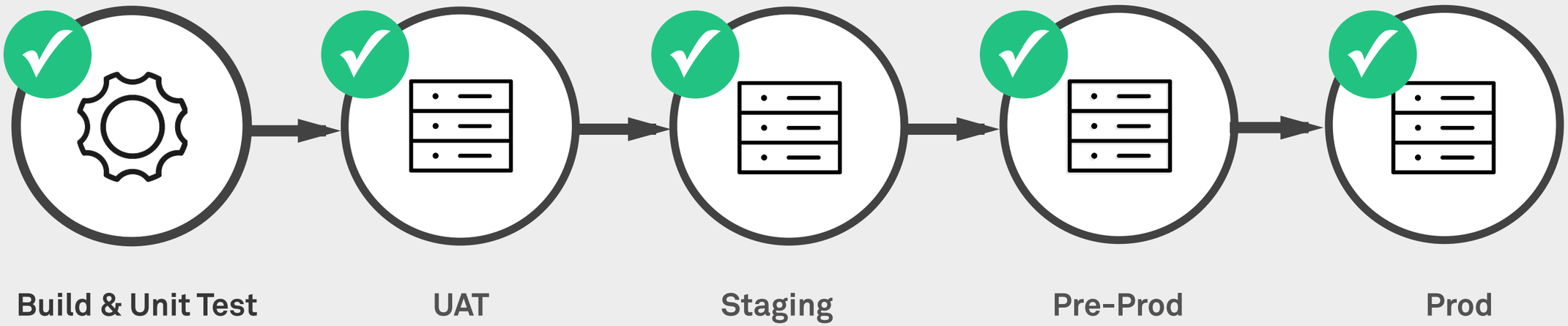


Scenario 2: Deploy succeeds

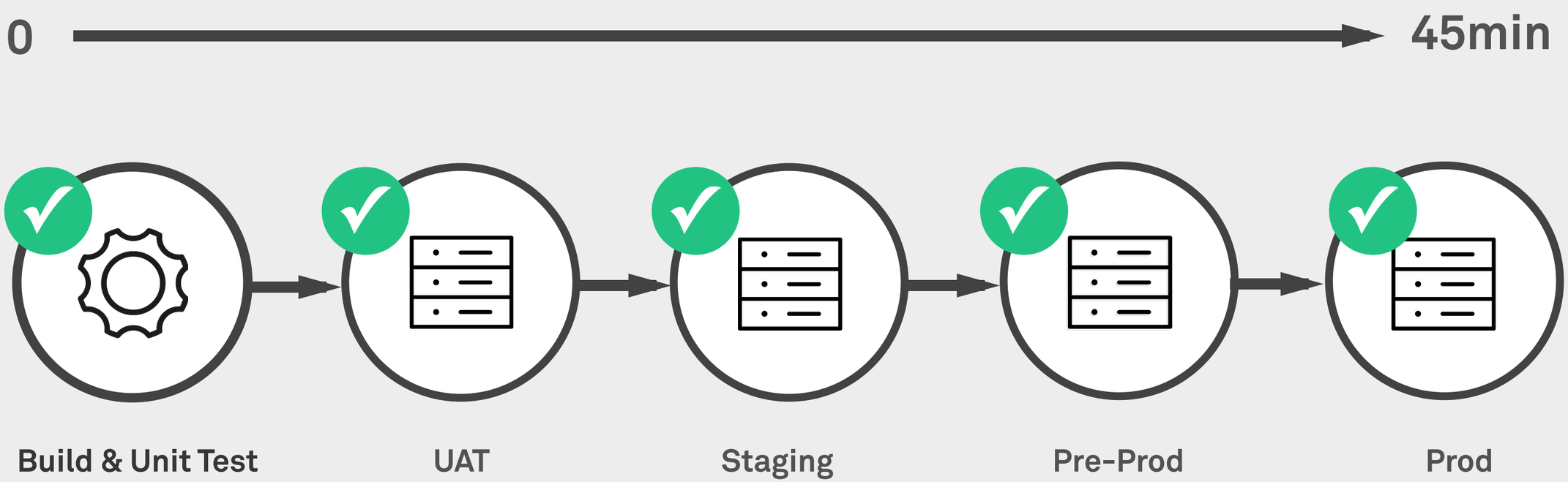


Scenario 1: Deploy fails

Dev triggers Prod deploy



Scenario 2: Deploy succeeds Application is live



The whole process can take up to 45 minutes from the last commit to deployment (without any fails)

Environments

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- Staging: More stable environment, deployed less frequently. Used to bug test / show stakeholders.
- Preview: Uses real production data and is used prior to deploying to production.

Going LIVE

Going LIVE

- Deploying to production uses a blue / green technique that eliminates down time.

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- Deploying to production uses a blue / green technique that eliminates down time.
- Blue / green means there are two instances running and all traffic is routed to either

Green / Blue be like

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On performance

Speed and responsiveness are crucial for successful web applications.

On performance

> For every 1 second of improvement Walmart experienced up to a 2% increase in conversions

webperformancetoday.com/2012/02/28/4-awesome-slides-showing-how-page-speed-correlates-to-business-metrics-at-walmart-com/

On performance

> Google's traffic dropped 20 percent on pages that loaded in an additional half second.

https://www.searchenginejournal.com/seo-101-important-site-speed-2014/111924/

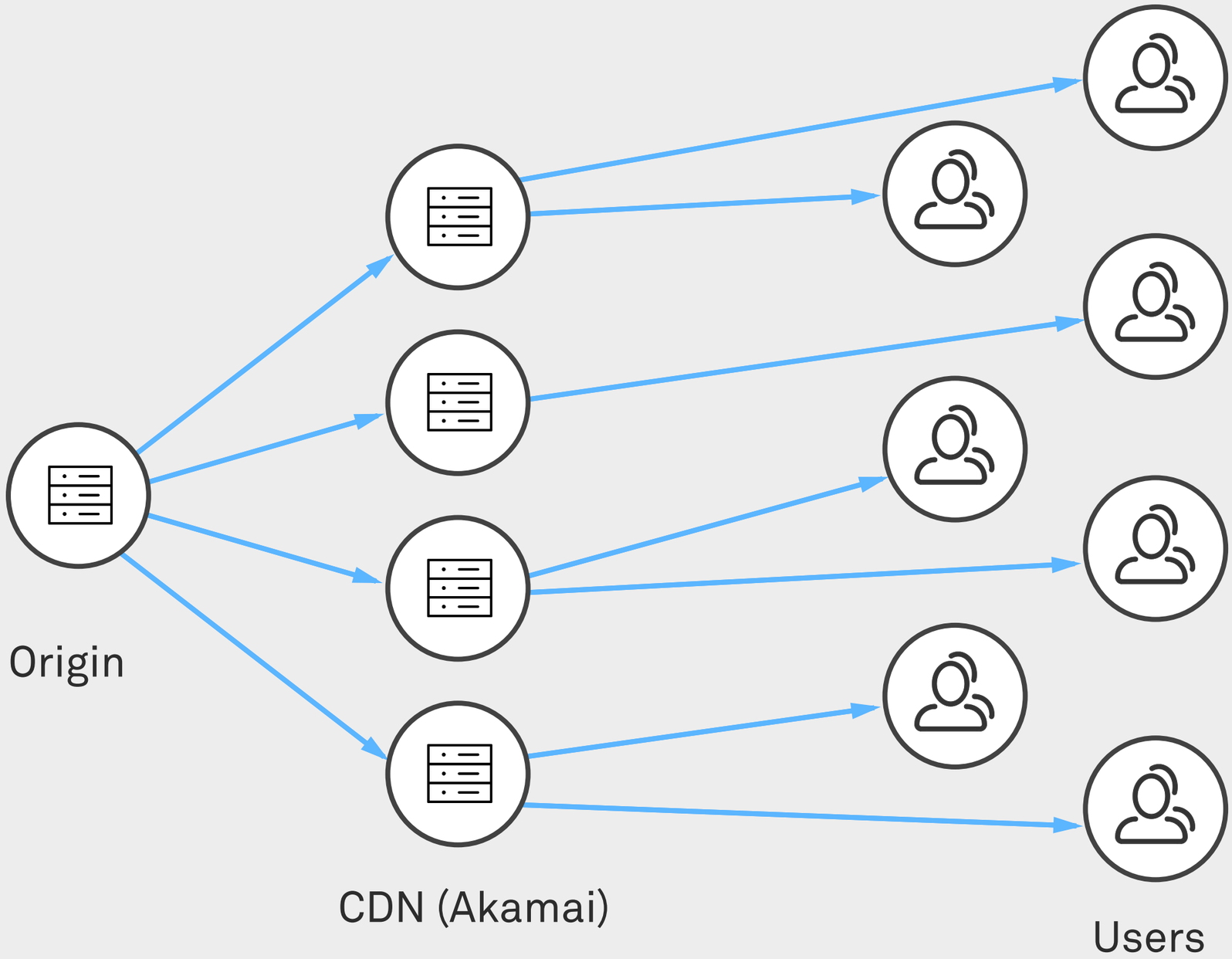
On performance

> A $100k / day ecommerce site would lose $2.5 million / year for each 1 second performance drop

https://blog.kissmetrics.com/loading-time/

What's a CDN?

A content delivery network is a way to allow content to be accessed from multiple servers around the world. These CDN servers get their content from an 'origin' server and users get their content from the CDN servers.


Origin
CDN (Akamai)
Users

Why a CDN?

Why a CDN?

- Performance: Users get content from the closest geographical region. This lowers latency.

Why a CDN?

- Performance: Users get content from the closest geographical region. This lowers latency.
- Stability: By dispersing content across multiple servers there is no single point of failure. Also, if origin crashes the CDN will continue serving the last good copy of the content.

Limitations

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As the origin server is only being accessed by the CDN we cannot use the CDN for dynamic content i.e. all content must be static content

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nine.com.au example

But it’s good for us

But it’s good for us

As our network is almost entirely static content we can take advantage of CDNs for performance, stability and cost savings.

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Image Media

Why are images so important

Images are the mainstay of engagement on the web.

Why are images so important

> Content with relevant images gets 94% more views than content without relevant images

blog.hubspot.com/marketing/visual-content-marketing-strategy

Why are images so important

Image size also comprises the majority of weight for page content across our sites. Therefore optimising images is key to improving performance.

Enter image resizer

The network image resizer is the backbone for serving our all-important image media across the network.

Enter image resizer

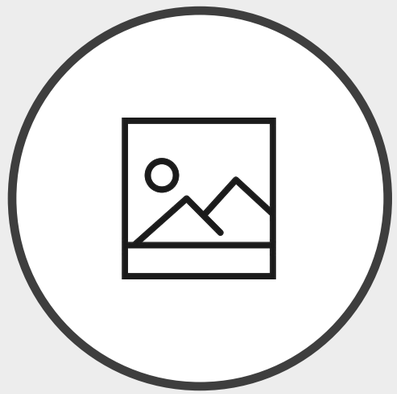

Image uploaded
to Sitecore

Enter image resizer

Image uploaded
to Sitecore

```
width:  4000px
height: 3000px
size:   2.1Mb
```

Enter image resizer

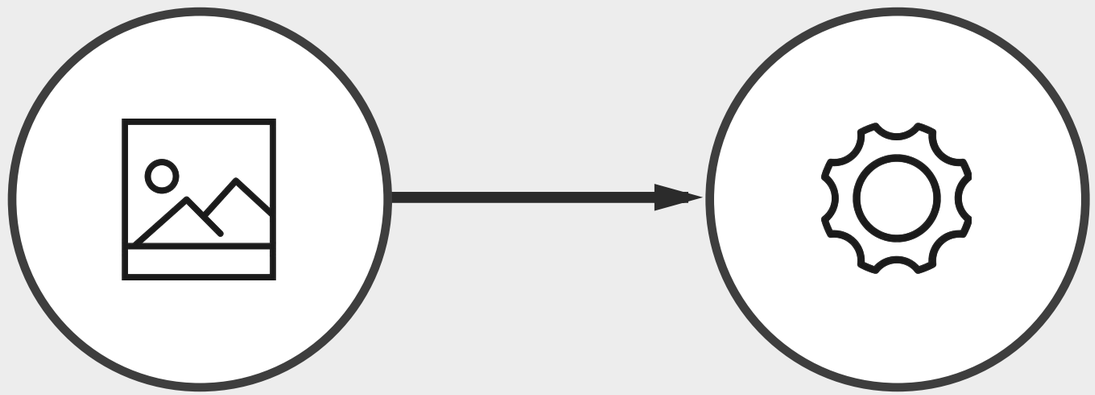

Image uploaded
to Sitecore

Image resizer
called via application

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width:  4000px
height: 3000px
size:   2.1Mb
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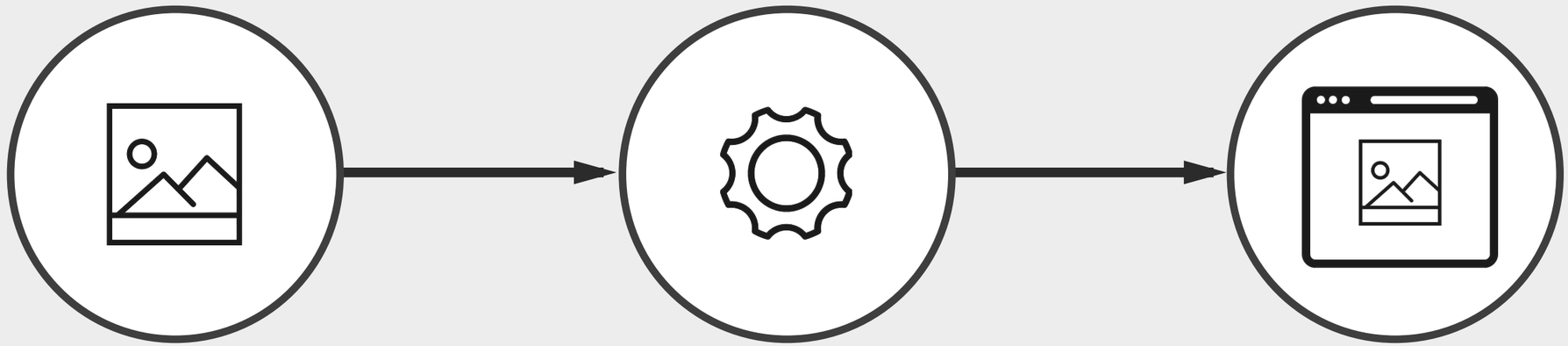

Image uploaded
to Sitecore

Image resizer
called via application

Resized image
is served

```
width:  4000px
height: 3000px
size:   2.1Mb
```

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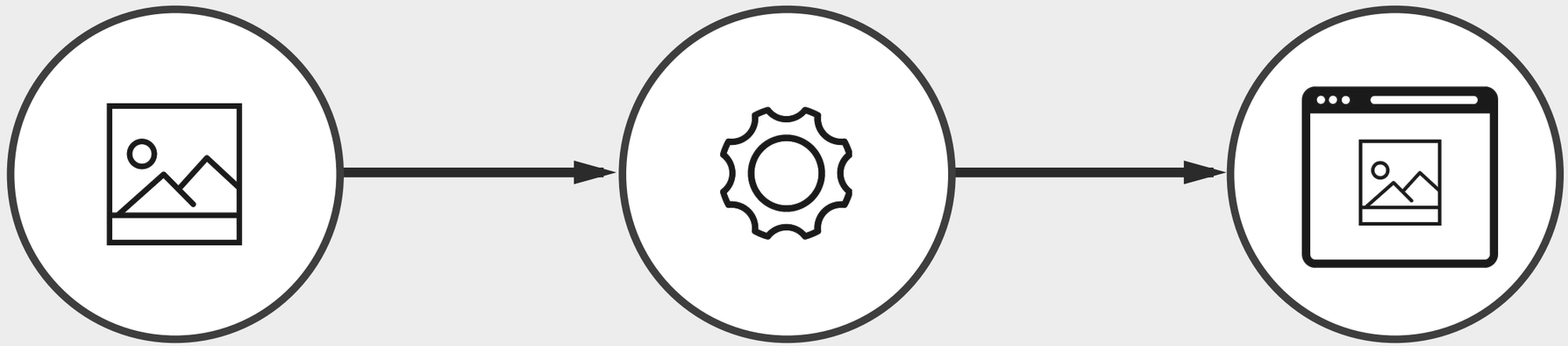


Image uploaded
to Sitecore

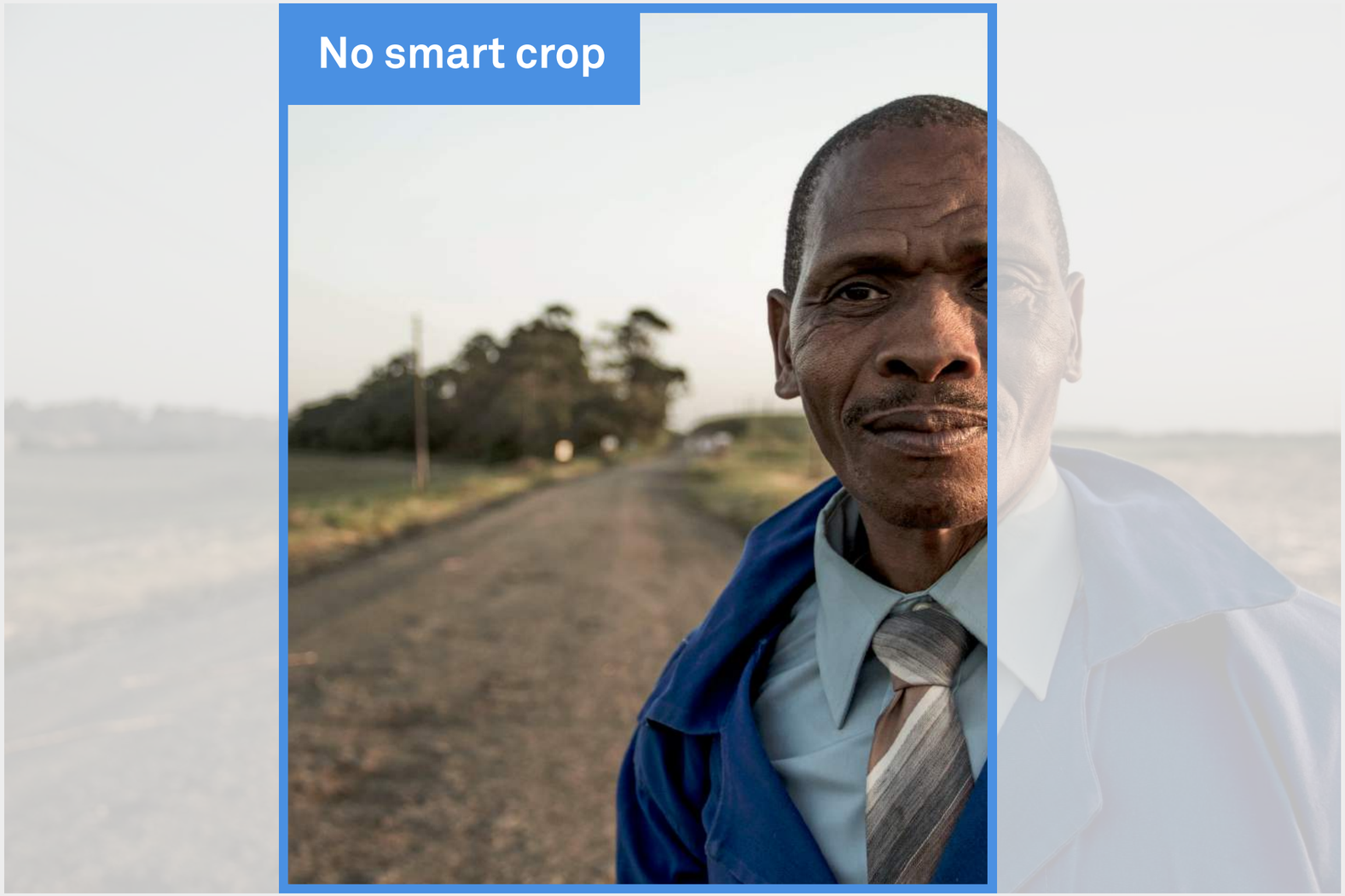
```
width:  4000px
height: 3000px
size:   2.1Mb
```

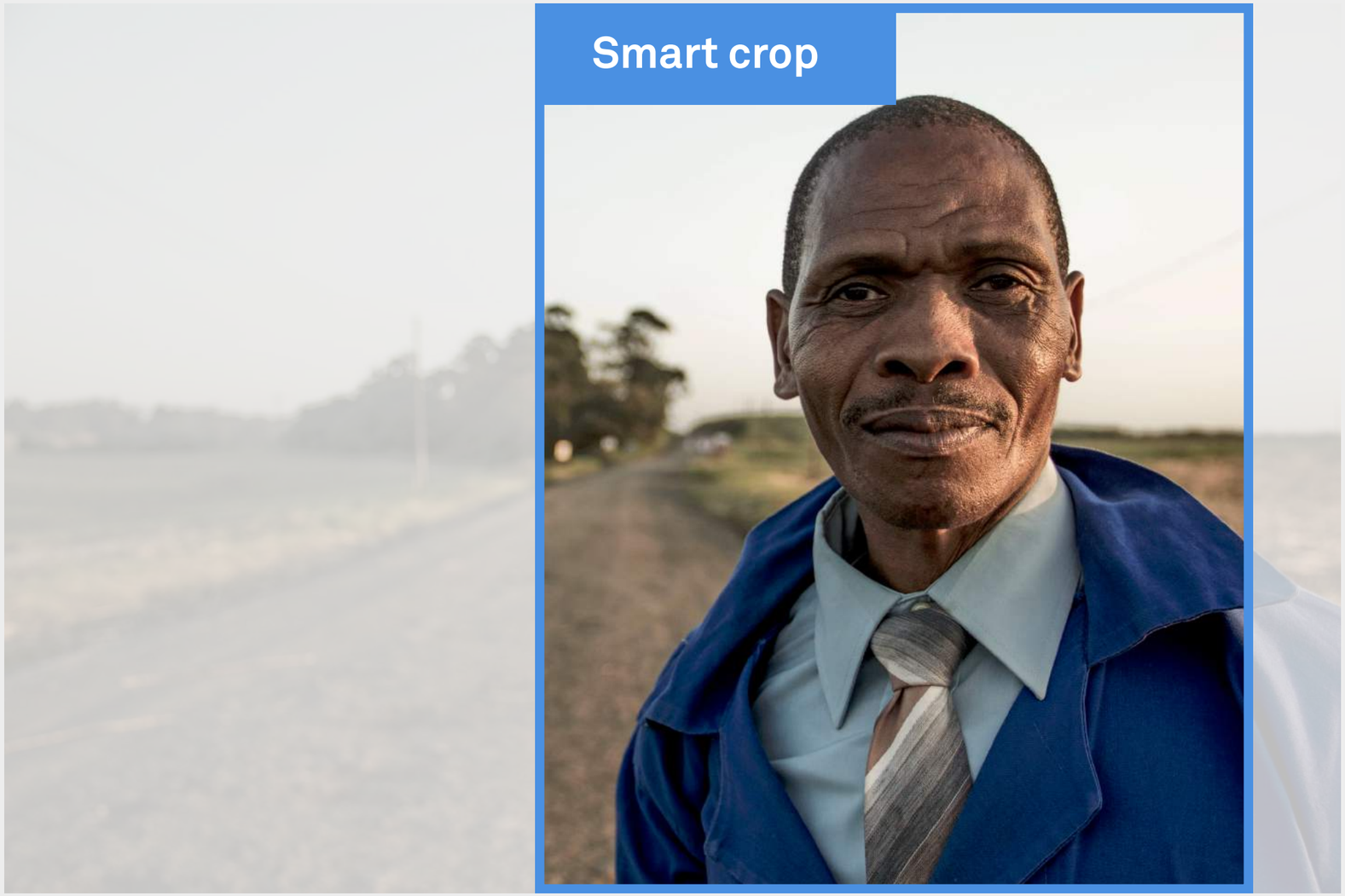
Image resizer
called via application

Resized image
is served

```
width:  200px
height: 150px
size:   15kb
```

… and it can smart crop, too


No smart crop


Smart crop

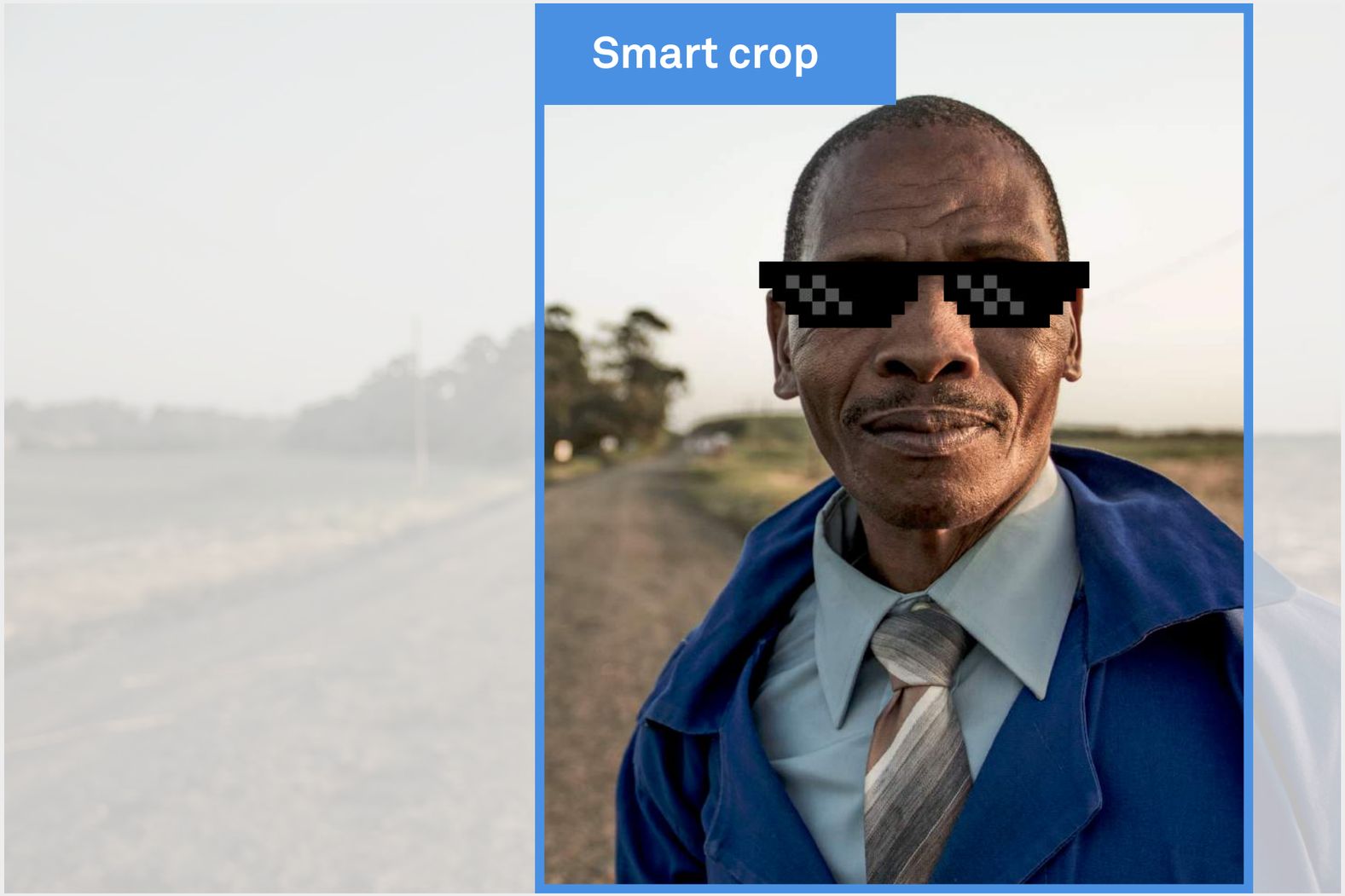

Smart crop

Image resizer + Picture tag

Image resizer + Picture tag

By using image resizer with the `<picture>` tag we can create responsive images to ensure the best performance and experience across all devices.

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Demo time!

Thank you.