

Reimagining the Image Pipeline at Squarespace



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Senior Software Engineer



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Staff Software Engineer

What Image Pipeline?

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Get in touch.

It all begins with an idea. Maybe you want to launch a business. Maybe you want to turn a hobby into something more. Or maybe you have a creative project to share with the world. Whatever it is, the way you tell your story online can make all the difference.

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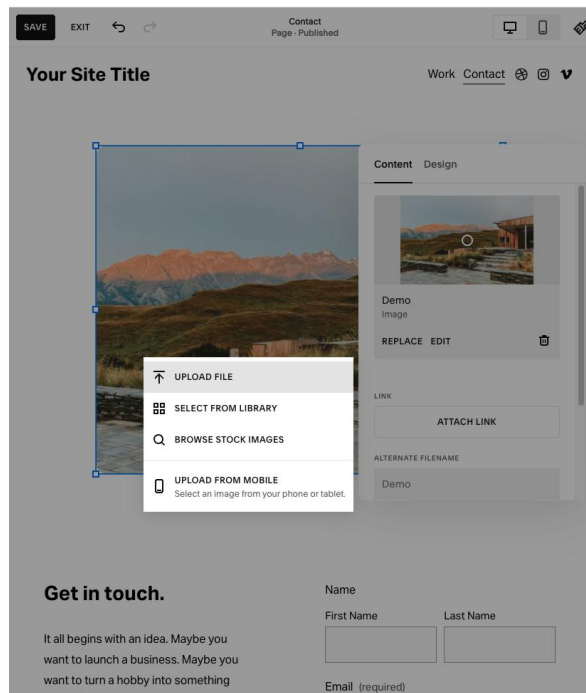


The above sections use the new Fluid Engine editor. [Looking for sections built with our Classic Editor?](#)

Areas of Expertise

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et

What Image Pipeline?



Get in touch.

It all begins with an idea. Maybe you want to launch a business. Maybe you want to turn a hobby into something more. Or maybe you have a creative project to share with the world. Whatever it is, the

Name

First Name

Last Name

Email (required)

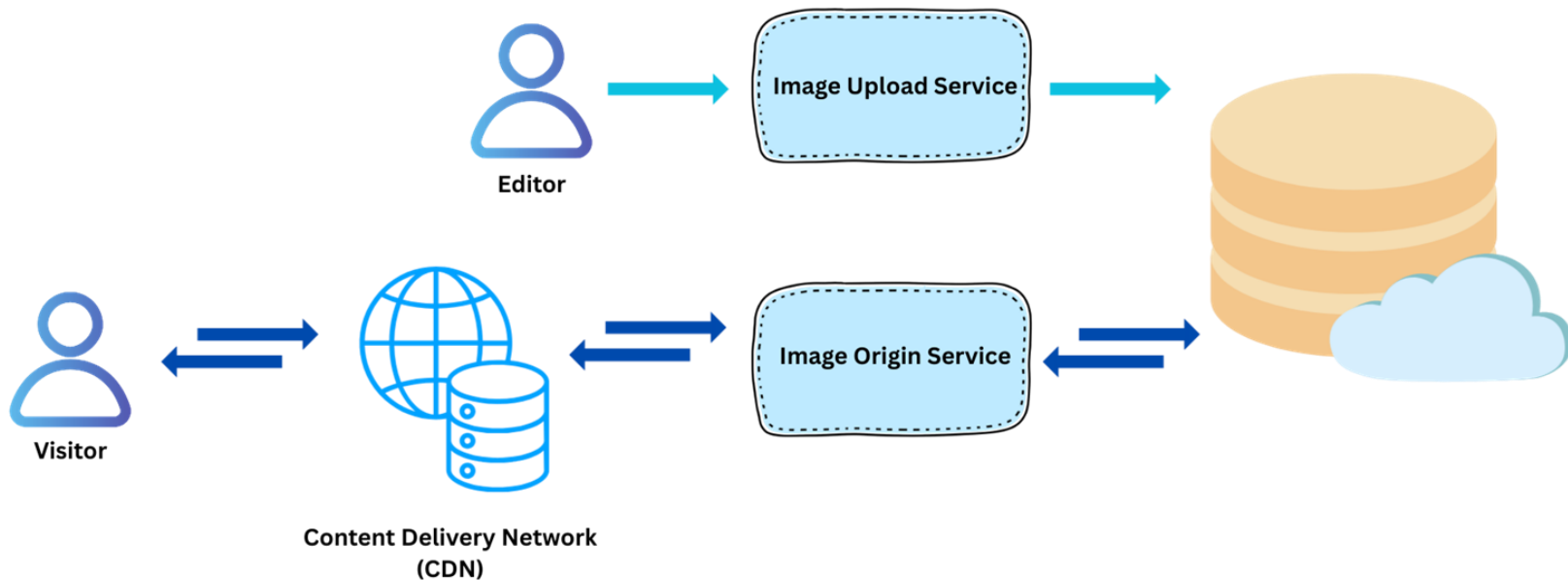
Why we care



Why we care



Image Pipeline Before



Content Delivery Network(CDN)

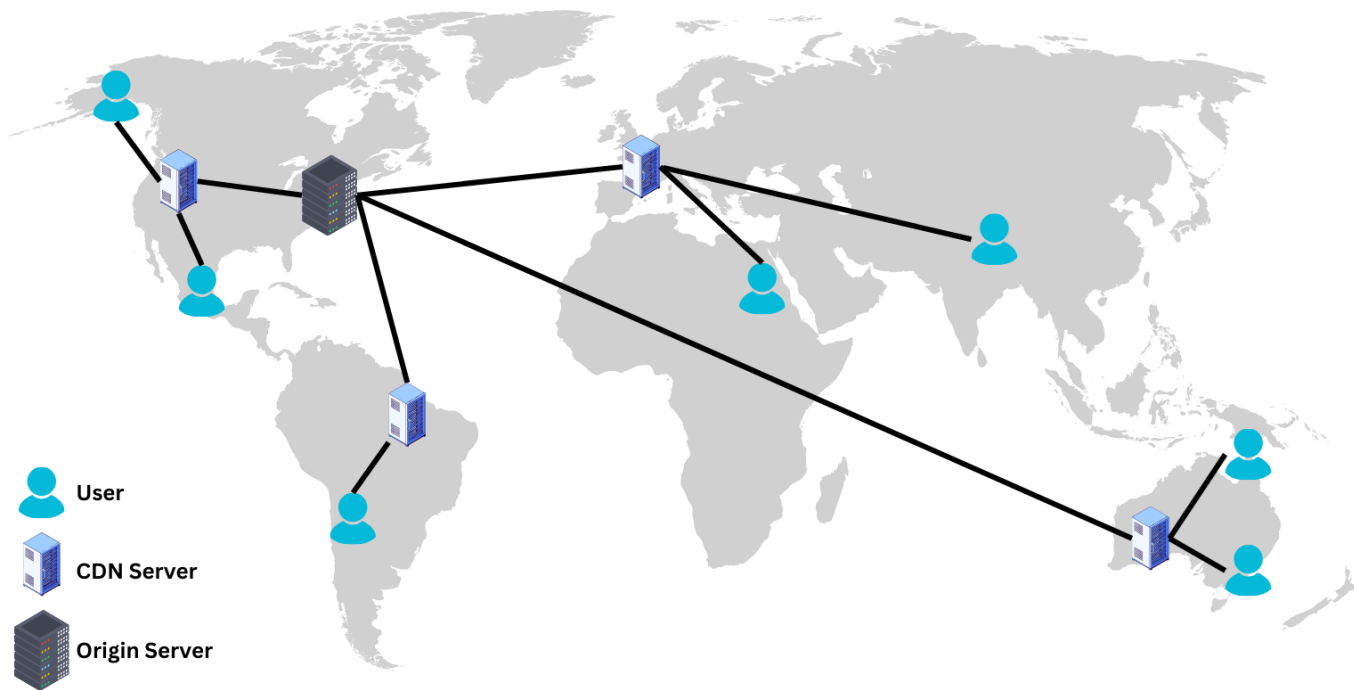


Image Pipeline Before

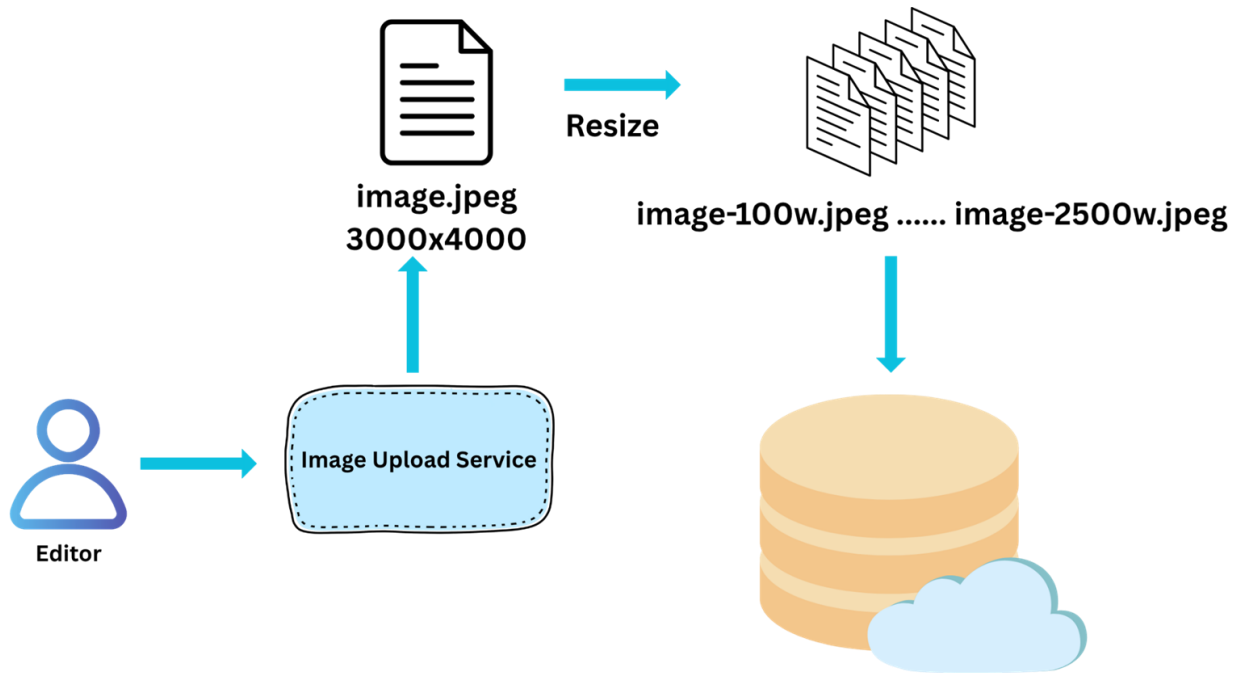


Image Pipeline Before

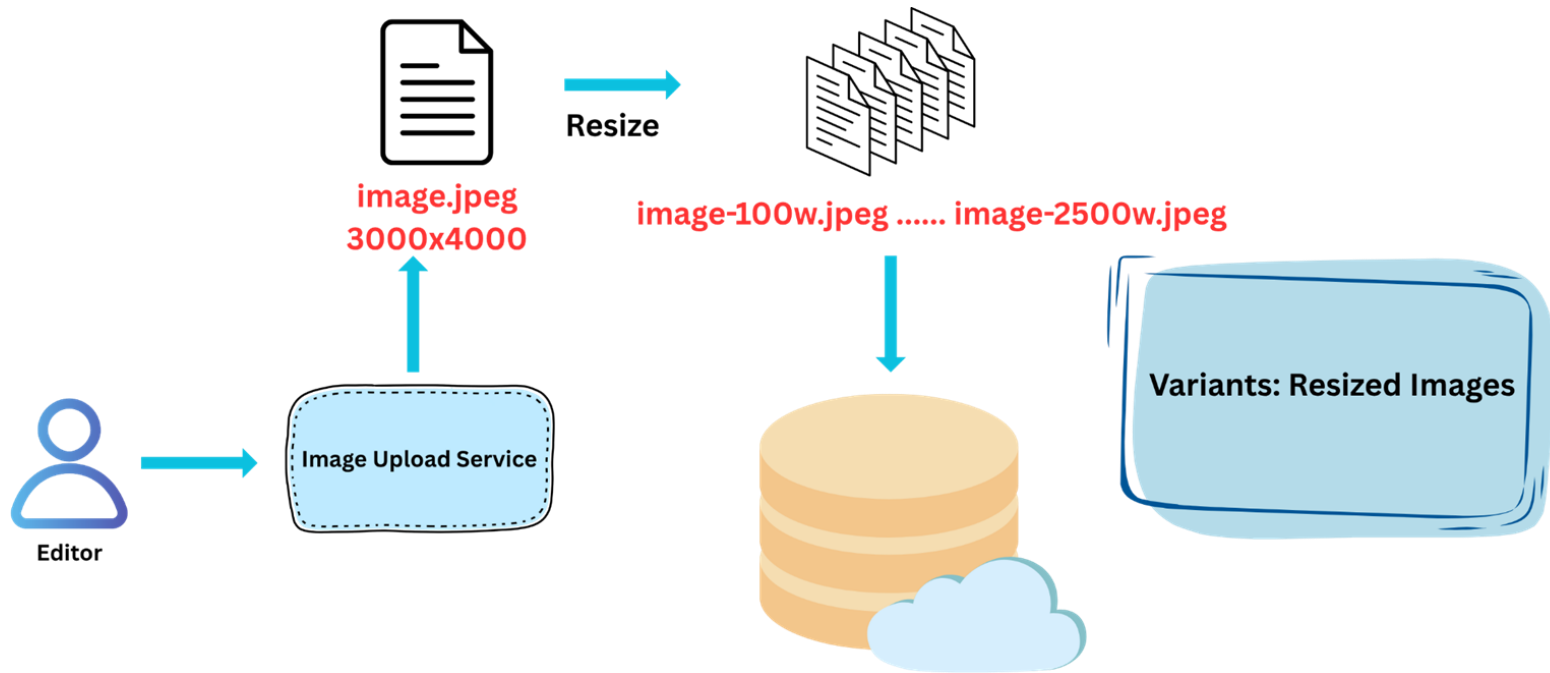
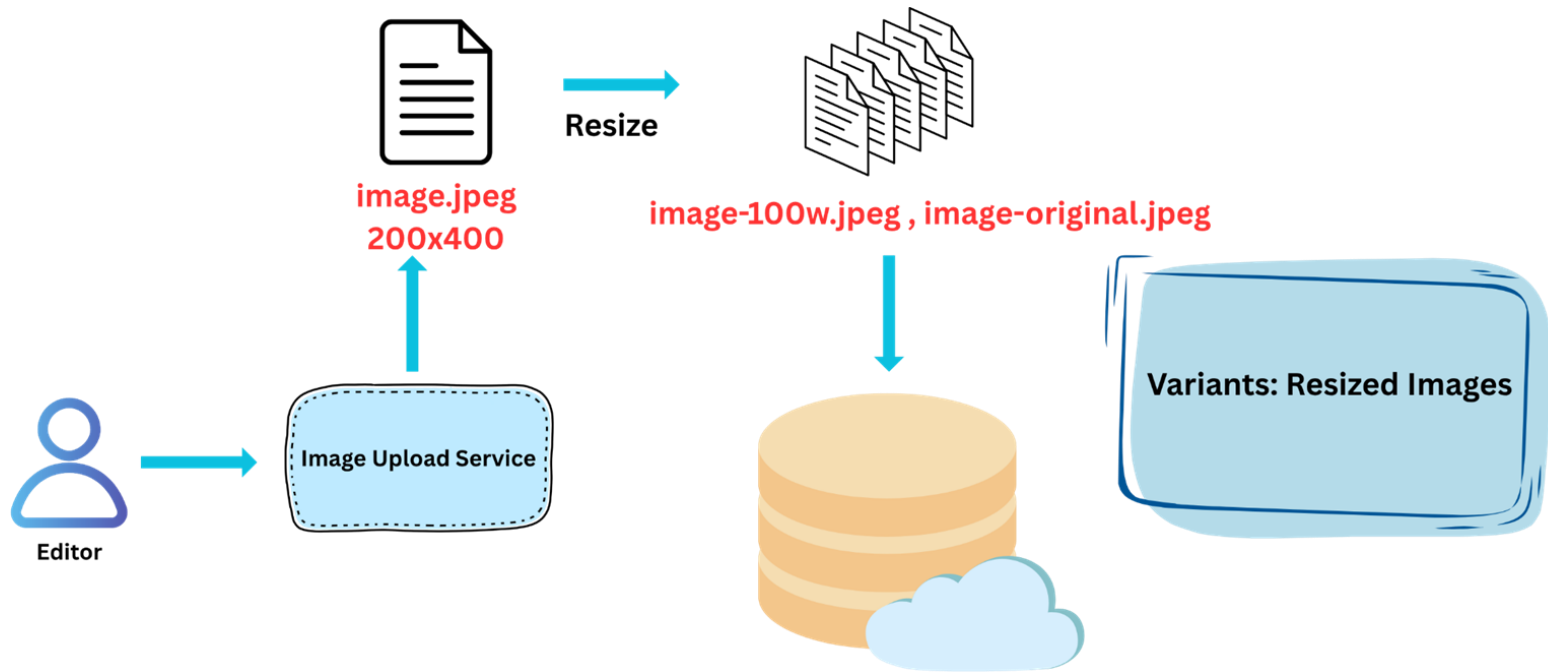


Image Pipeline Before





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A Perfect Image Pipeline

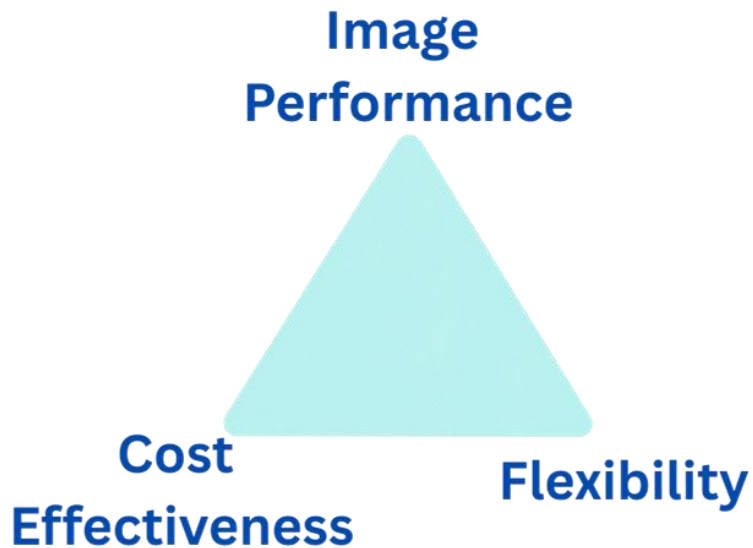


Image Performance



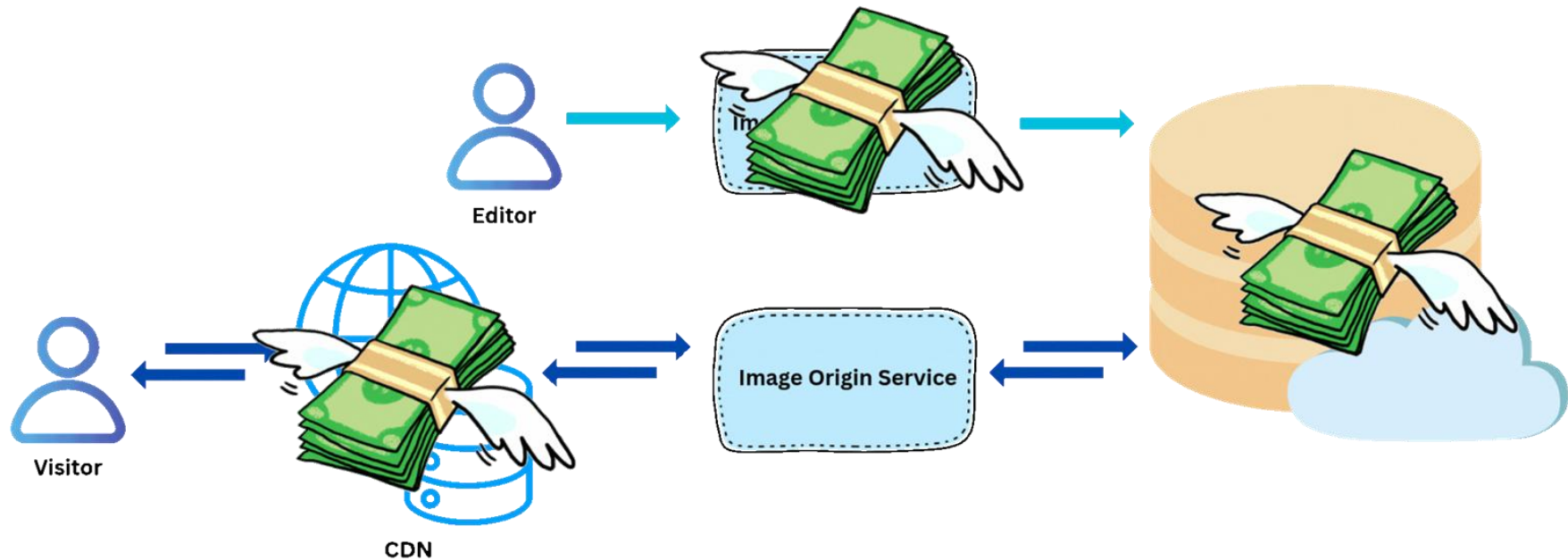


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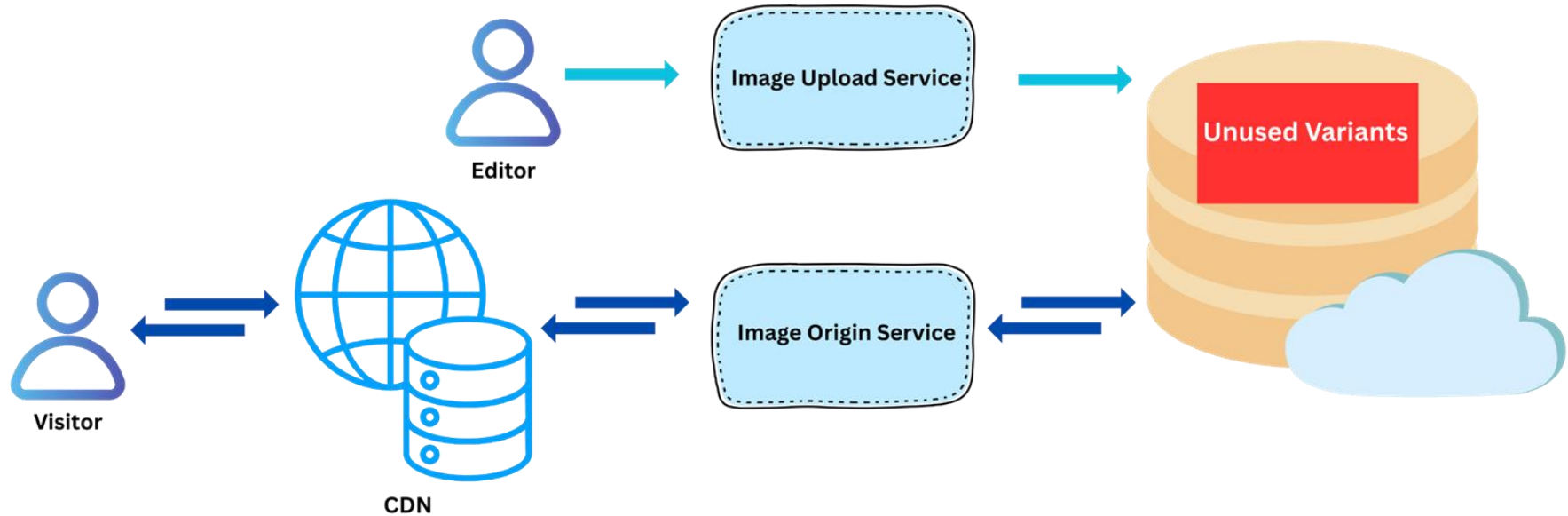
Image Performance



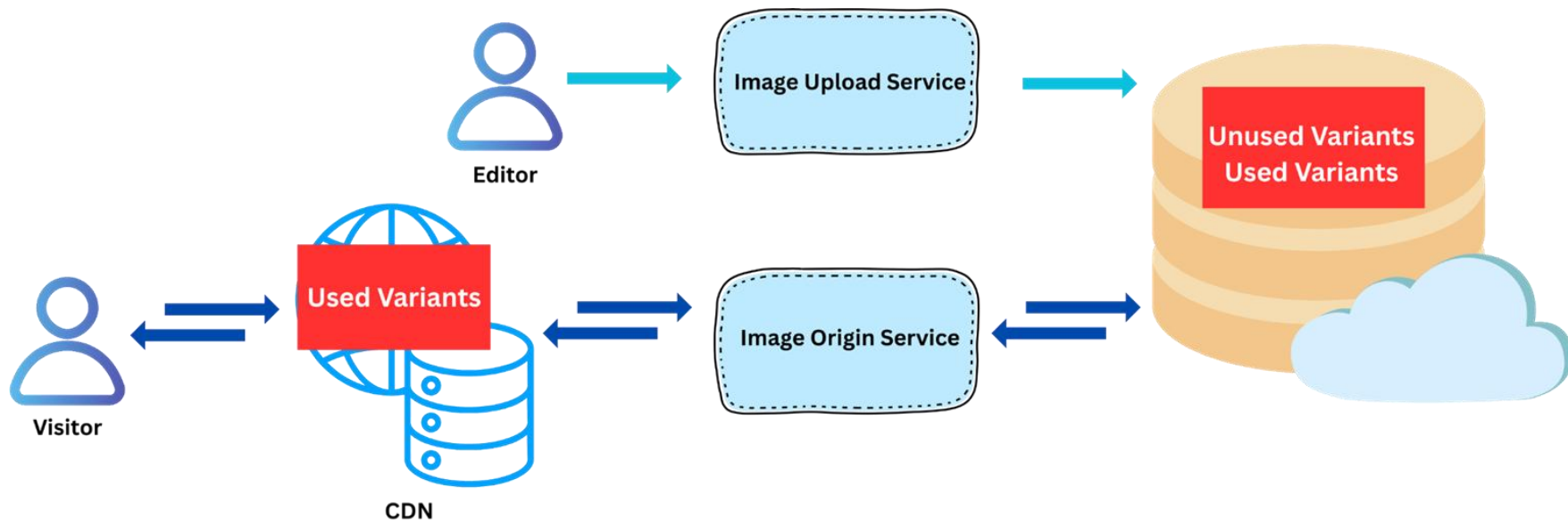
Cost Effectiveness



Cost Effectiveness



Cost Effectiveness



Flexibility

Format



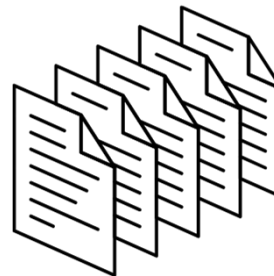
Flexibility

Format

Size



Resize



Flexibility

Format

Size

Quality



Flexibility

Format

Size

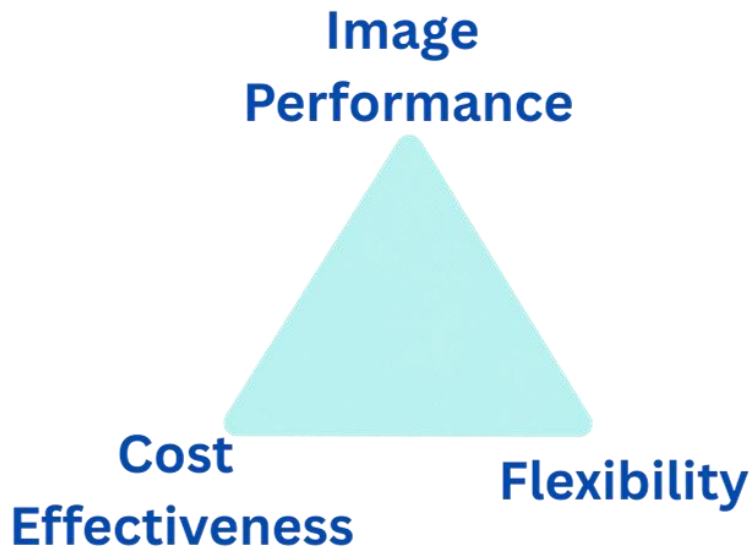
Quality





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A Perfect Image Pipeline



What Has Changed Around Us

web 📷 p

What Has Changed Around Us

web  p

VIPS

What Has Changed Around Us

web  p

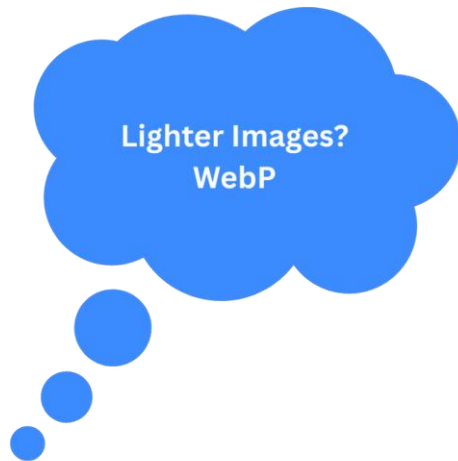
VIPS

What Has Changed Around Us

web  p

VIPS







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Lighter Images?
WebP

Reprocess?
~~Cost~~



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Lighter Images?
WebP

Reprocess?
~~Cost~~



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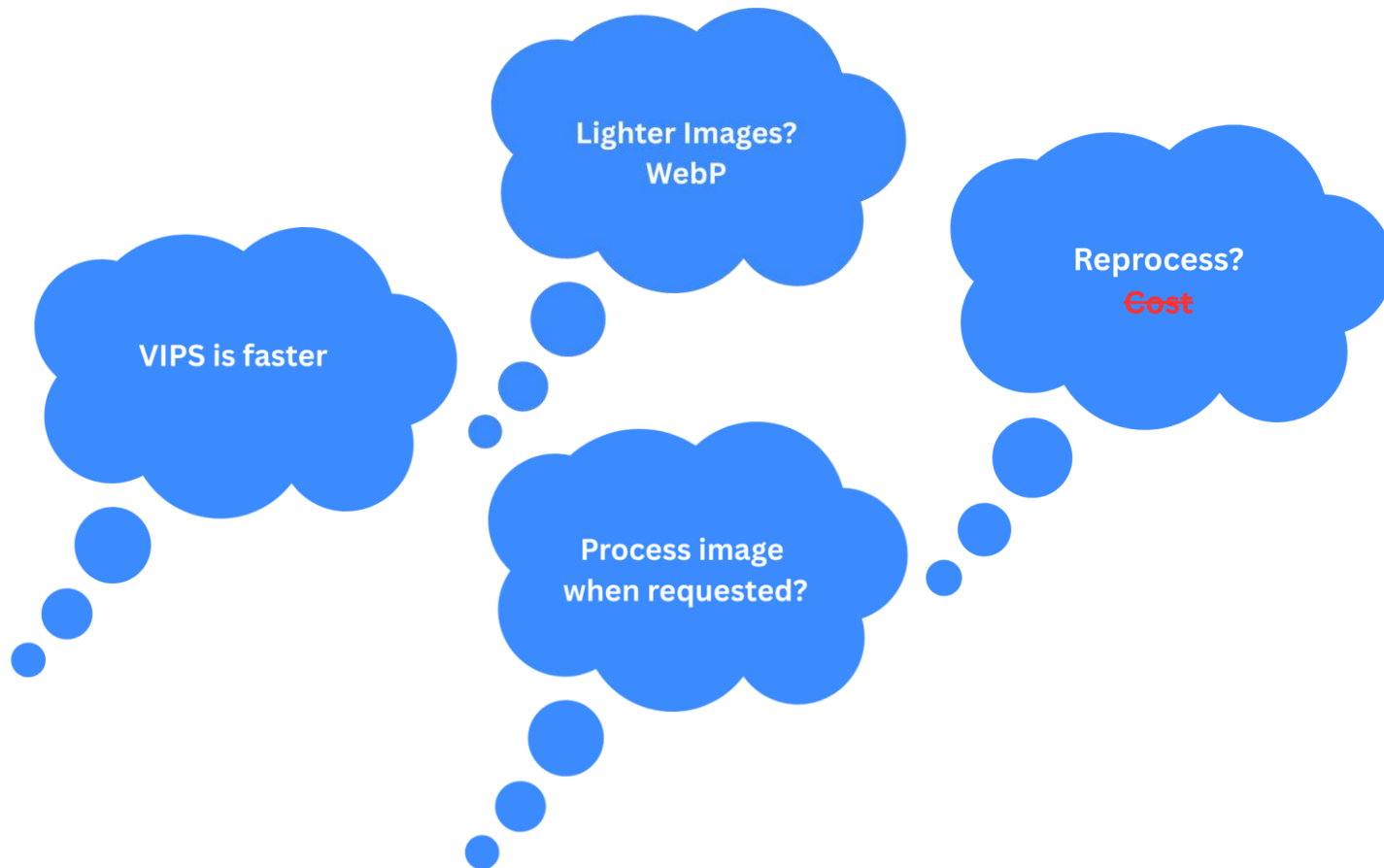
VIPS is faster

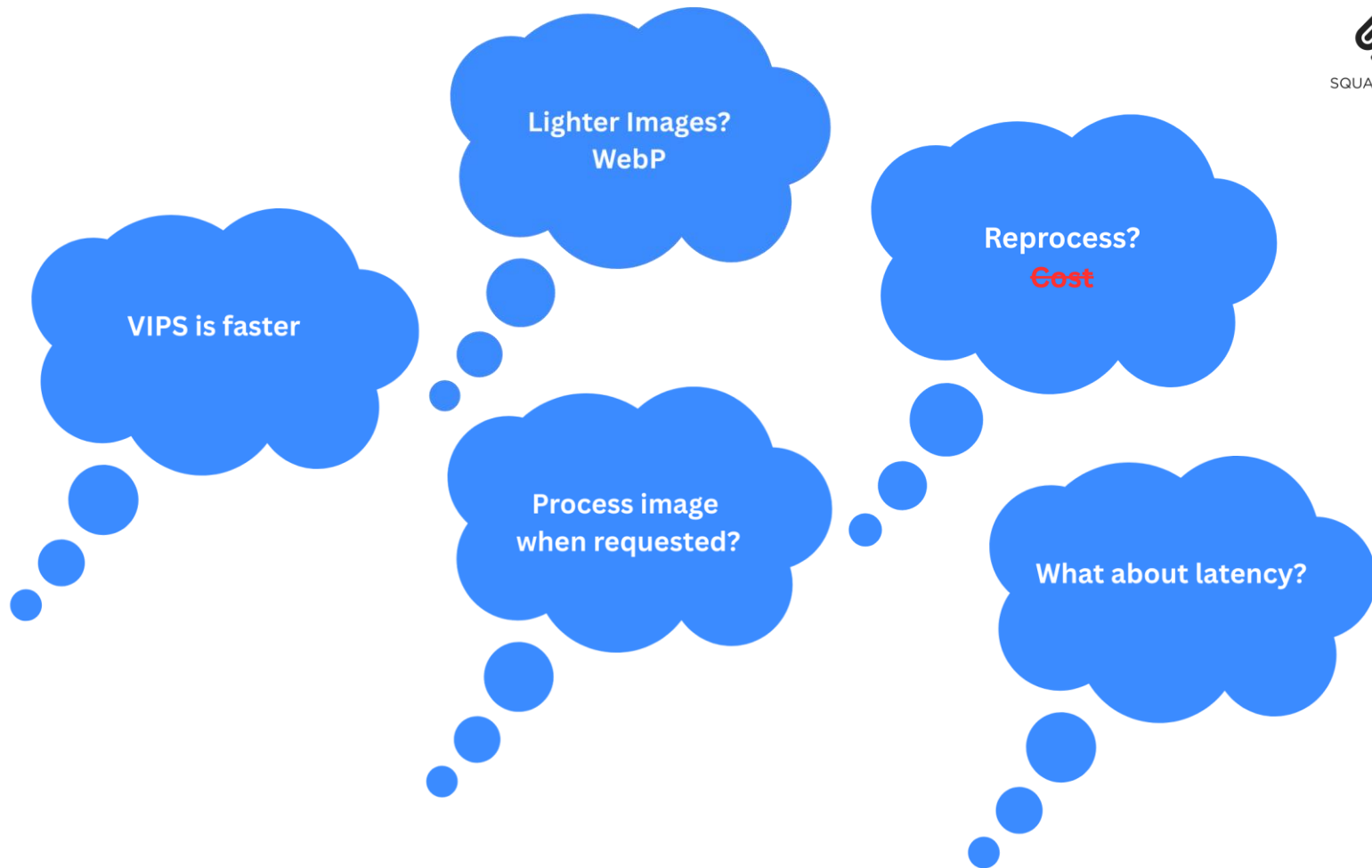
Lighter Images?
WebP

Reprocess?
~~Cost~~

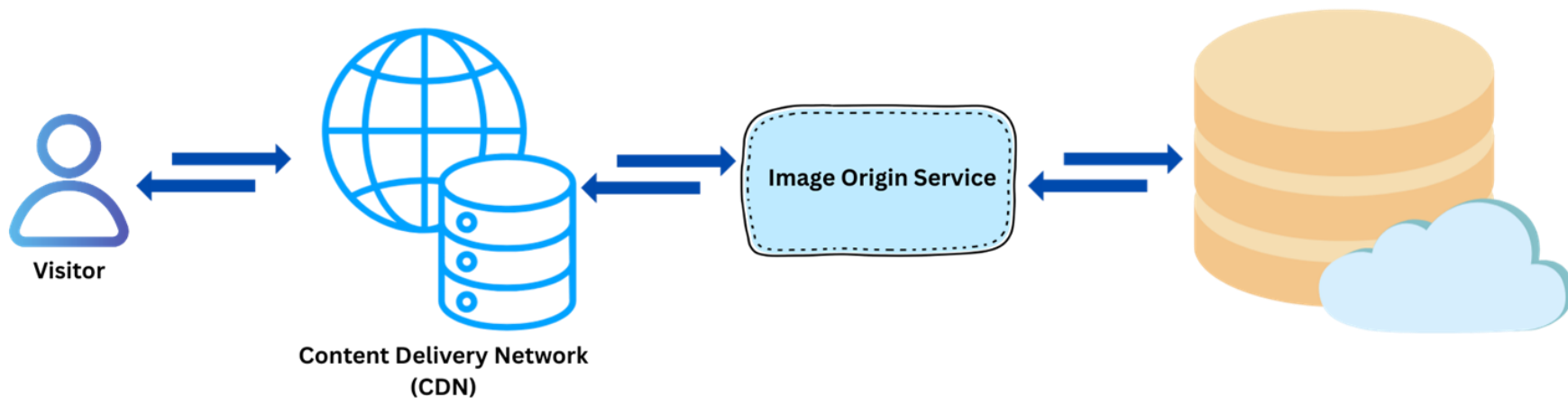


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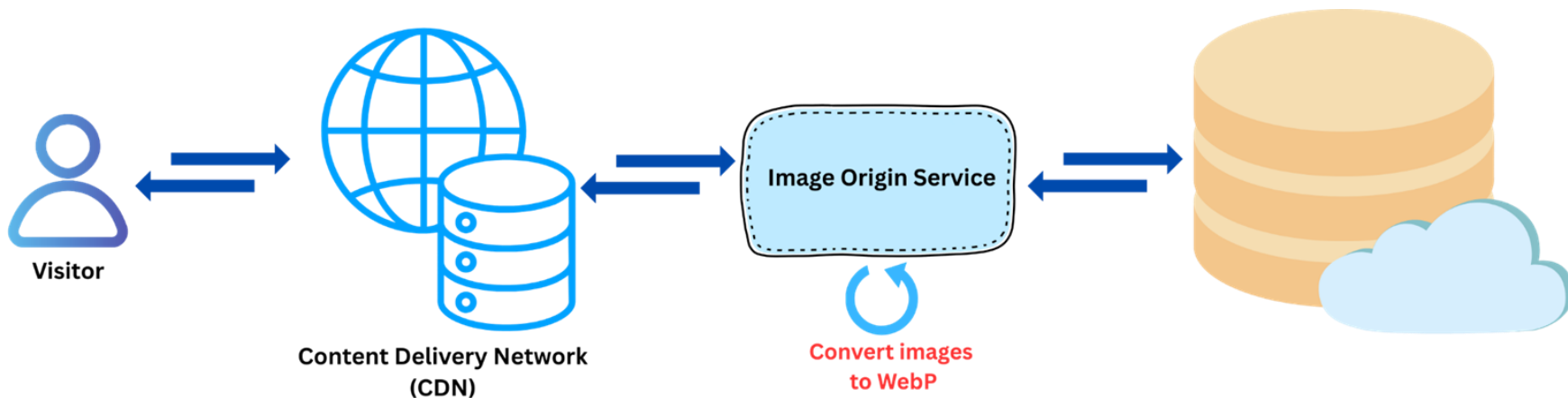




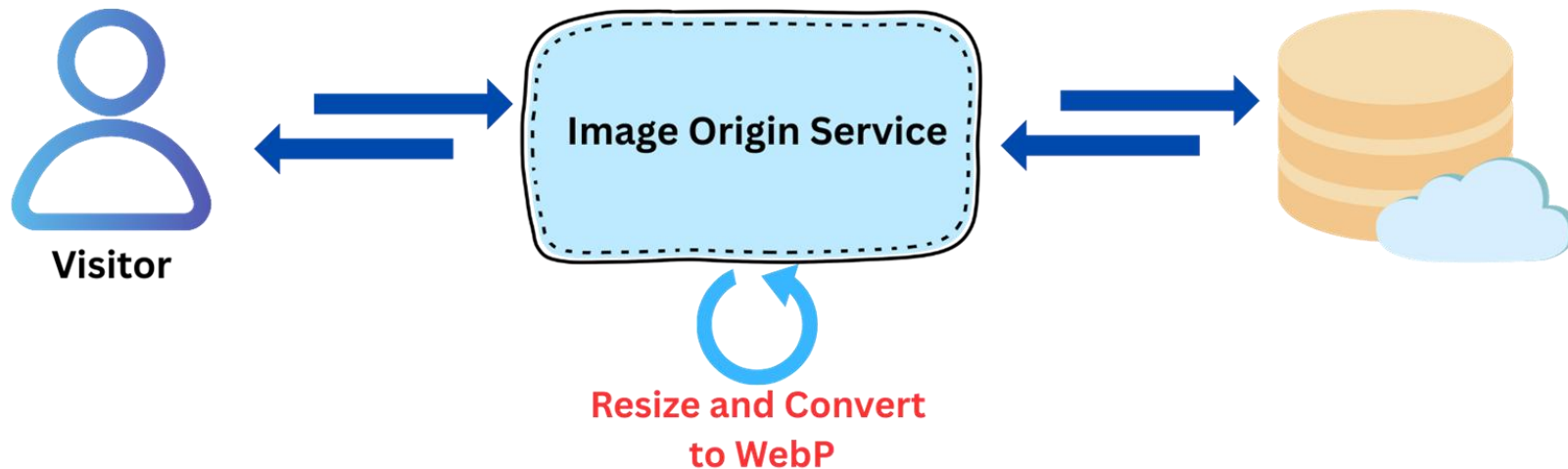
What We Are Suggesting



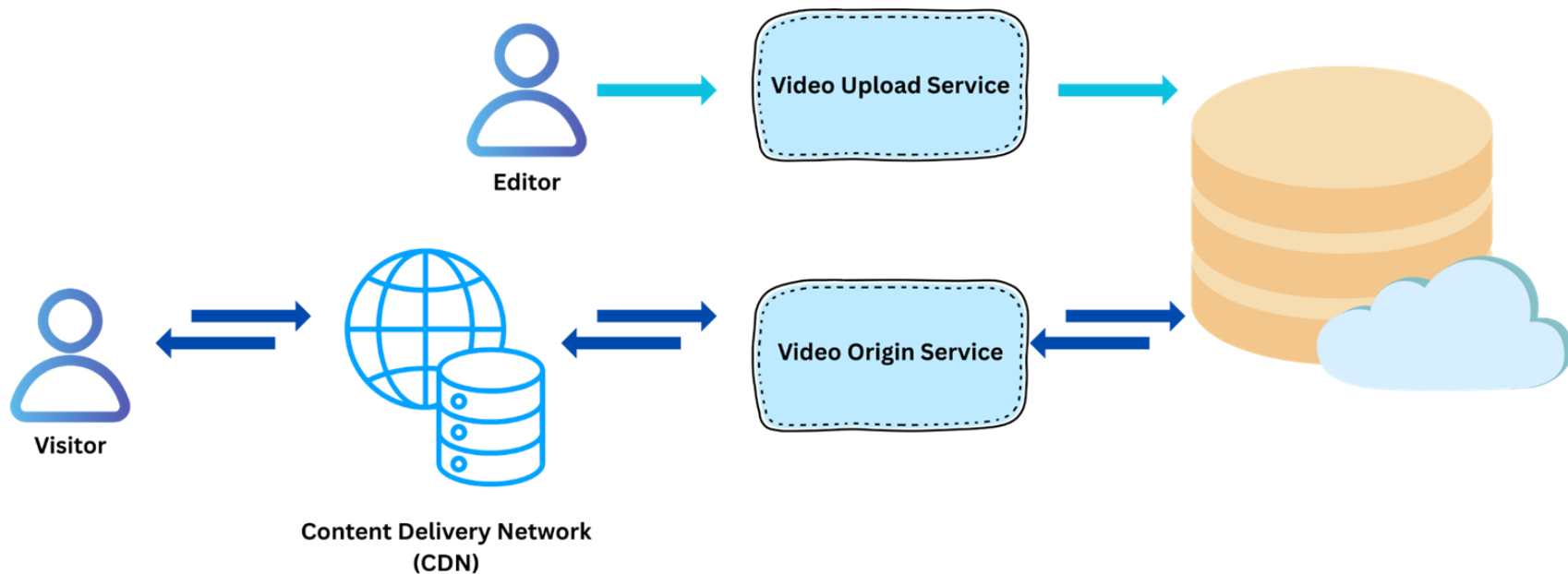
What We Are Suggesting



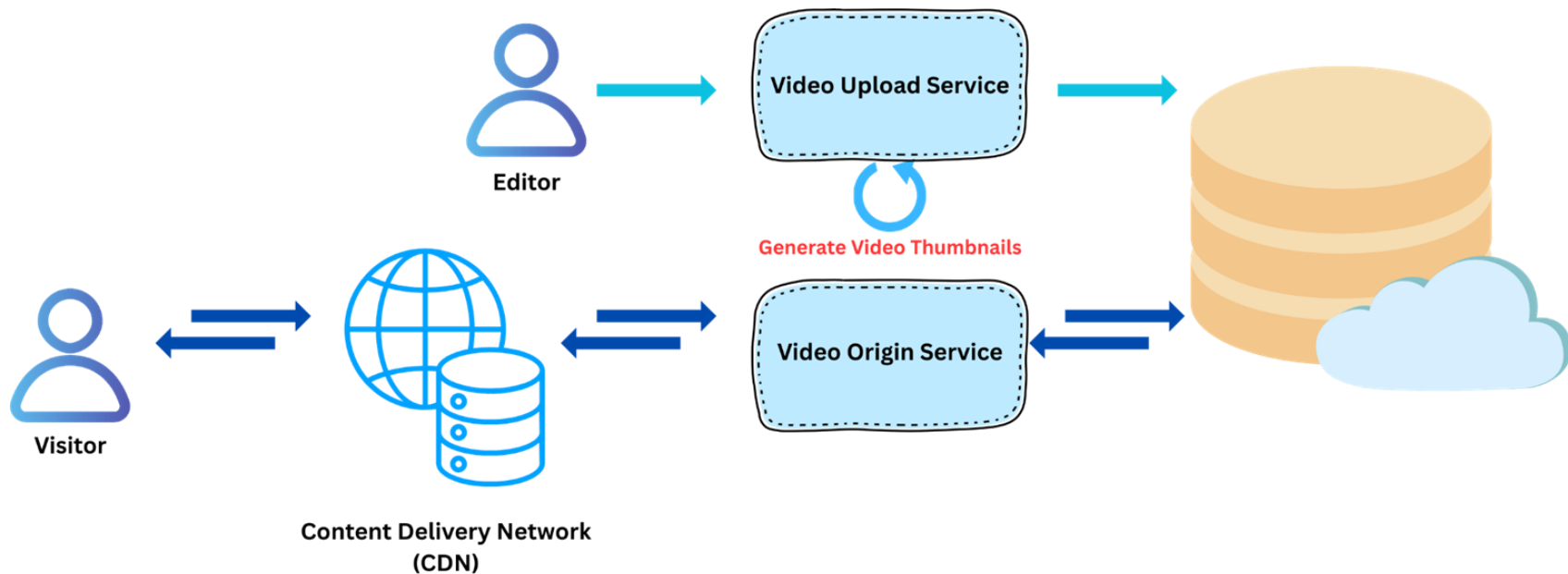
Hackweek Project



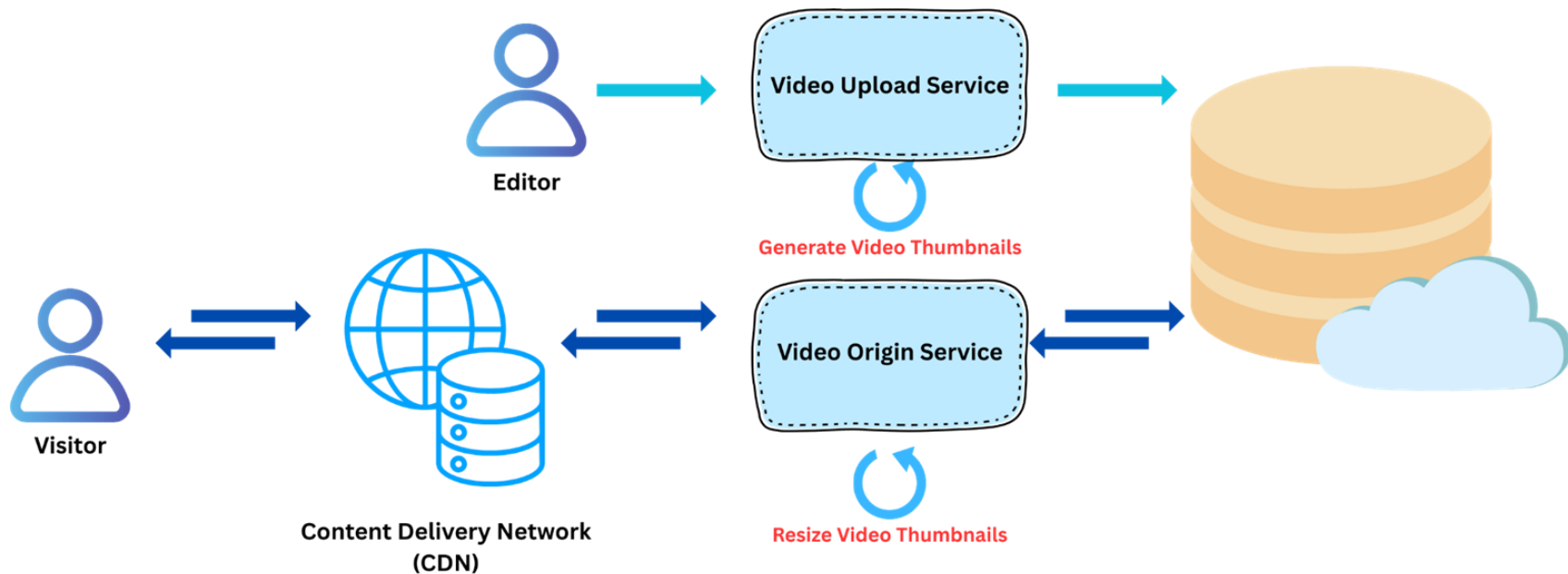
A Pilot



A Pilot



A Pilot



A Pilot

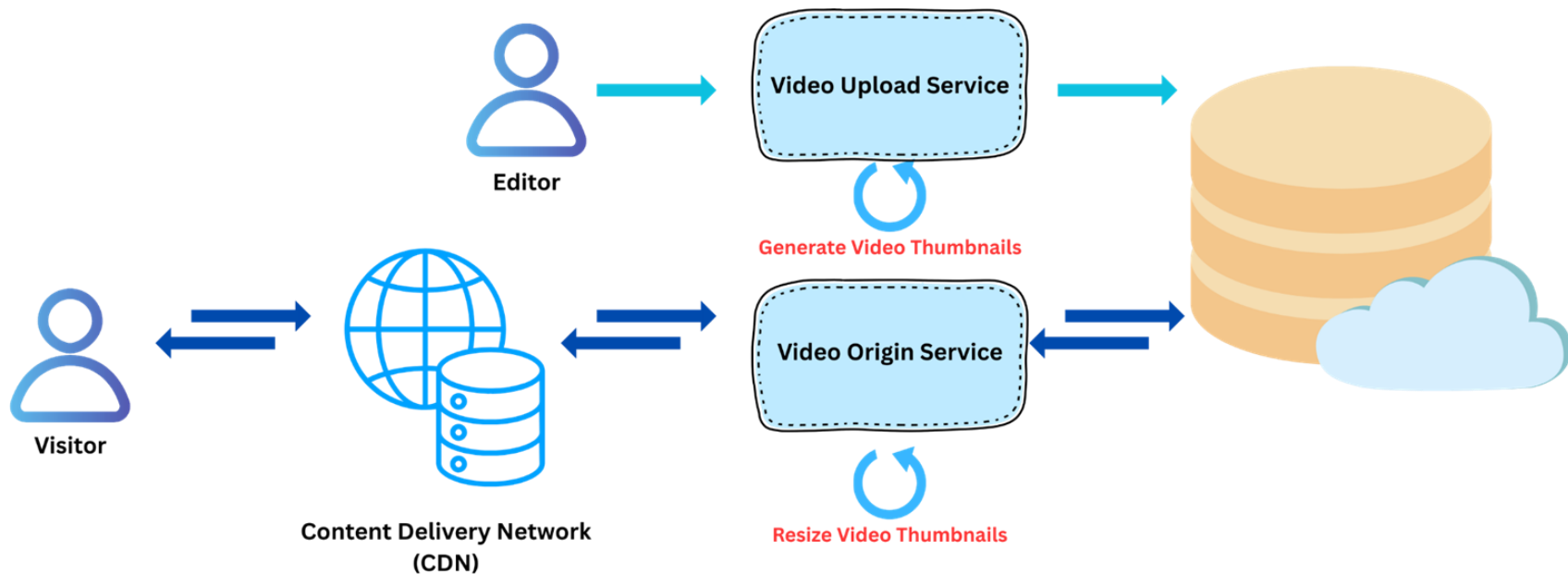


Image Pipeline Reimagined

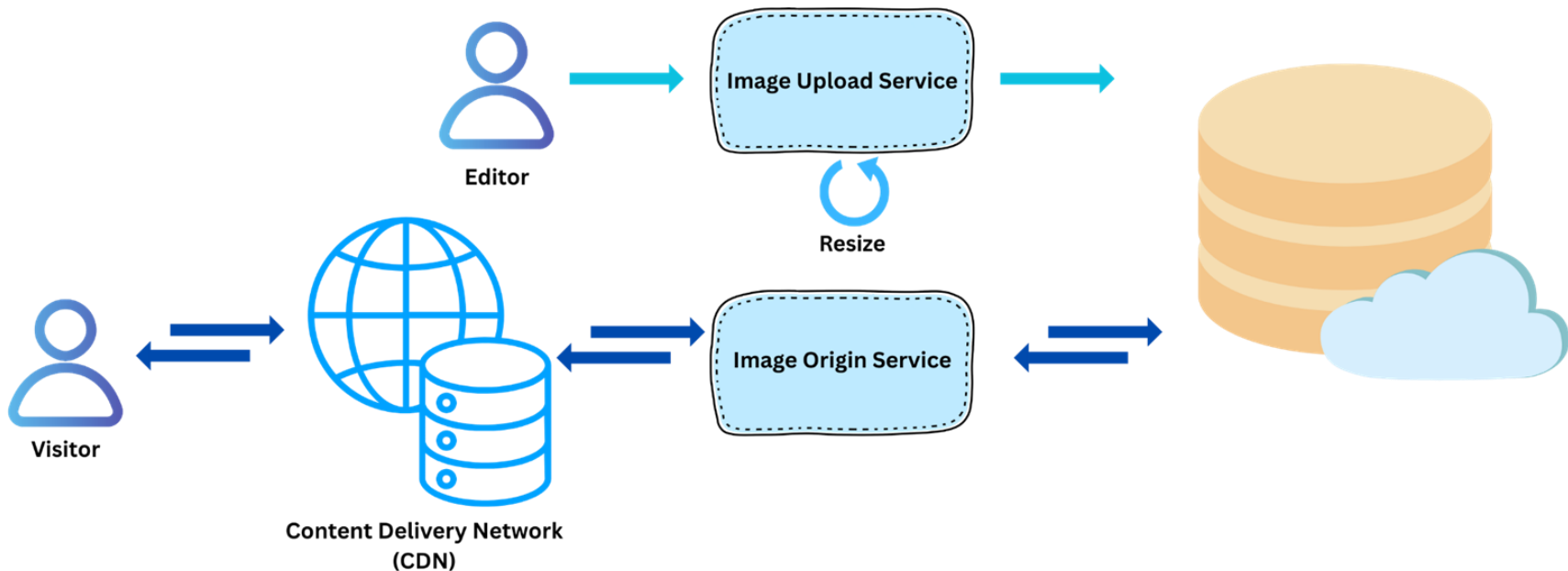


Image Pipeline Reimagined

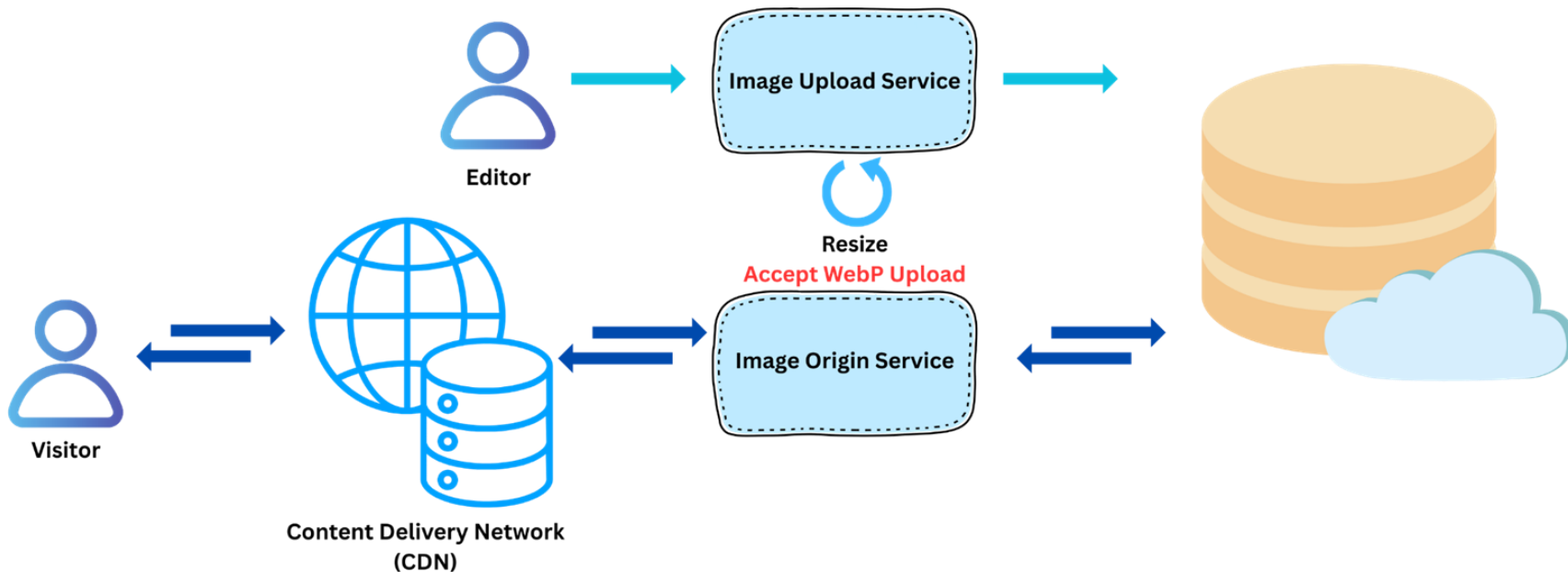


Image Pipeline Reimagined

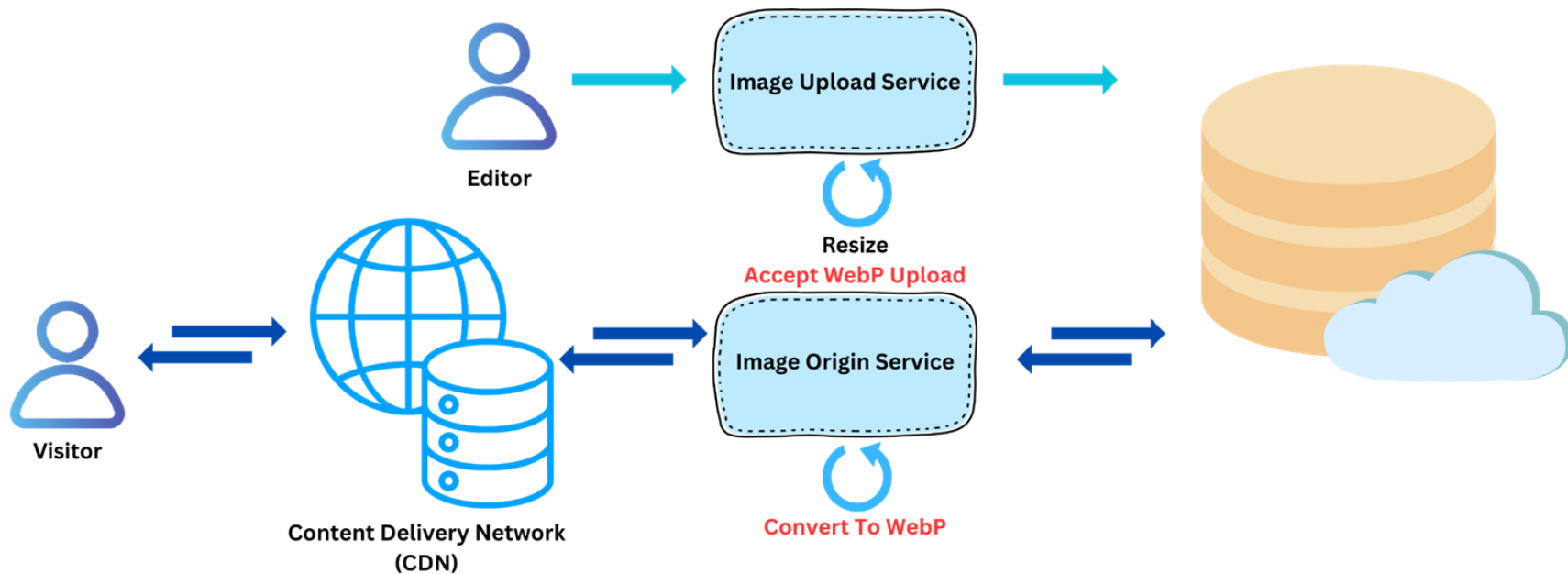
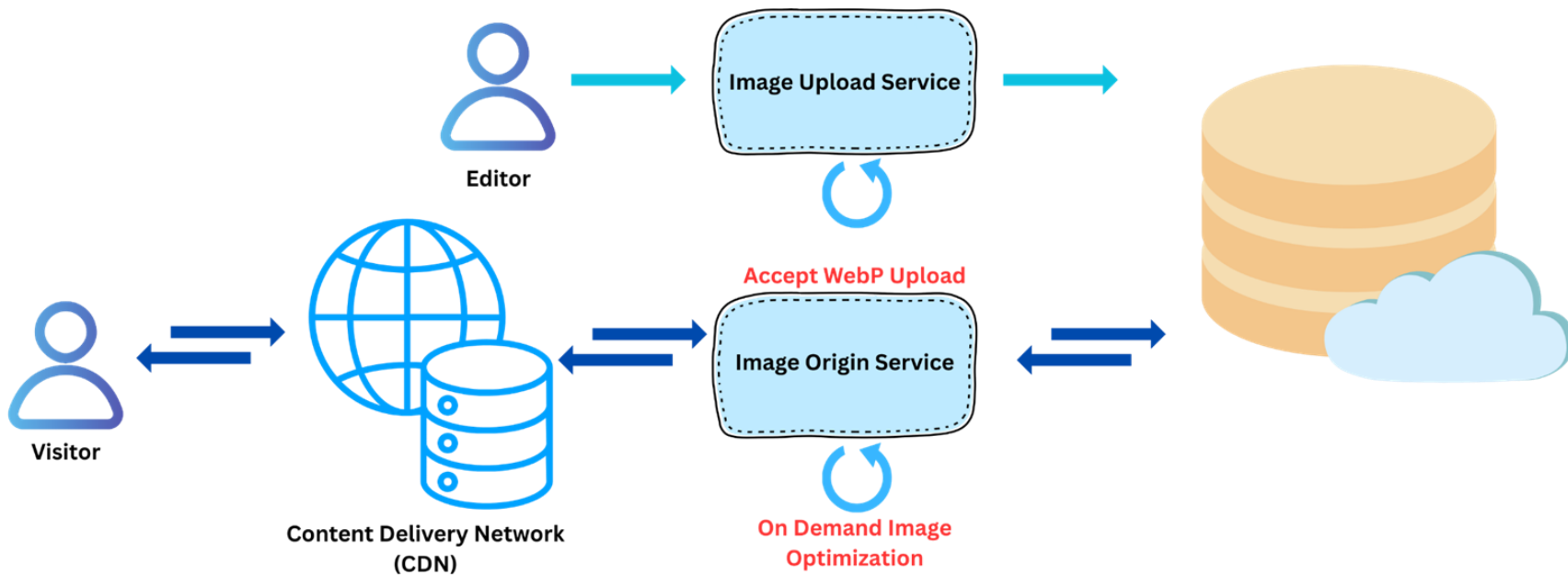


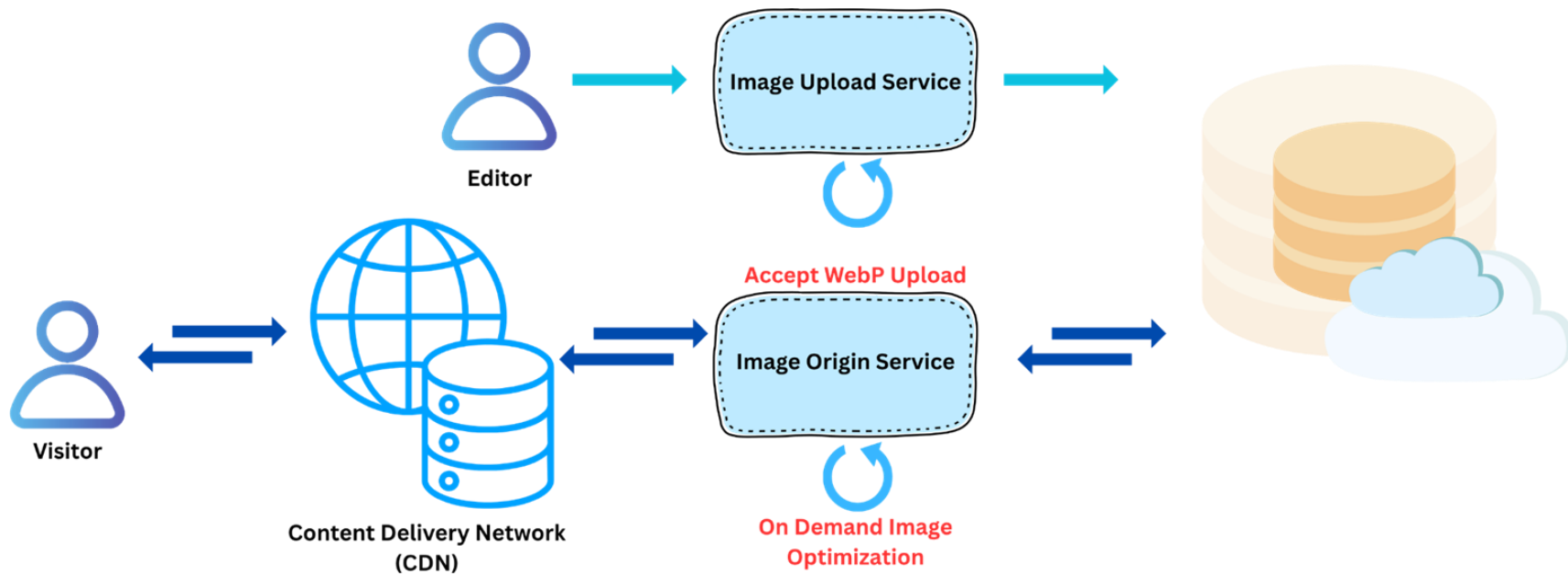
Image Pipeline Reimagined





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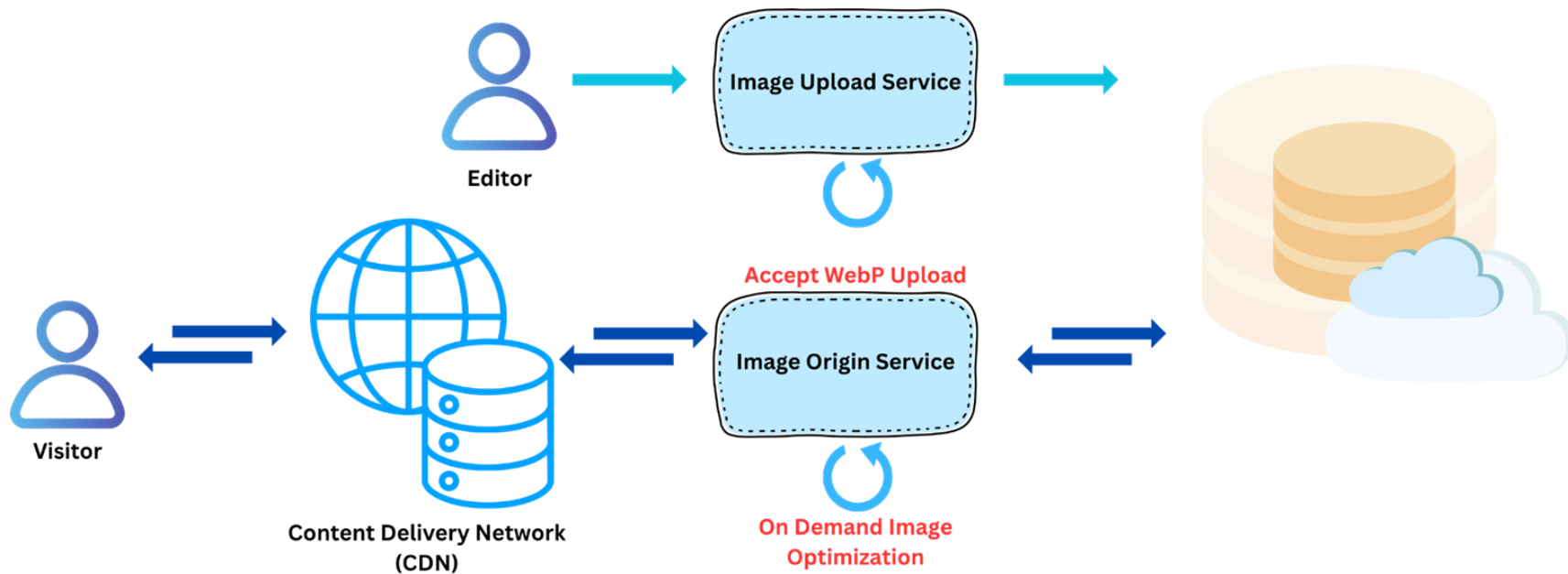
Image Pipeline Reimagined





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Image Pipeline Reimagined



But...

WebP is not universally supported

But...

WebP is not universally supported

What to Serve and When?



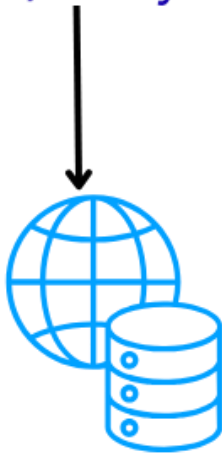
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What to Serve and When?

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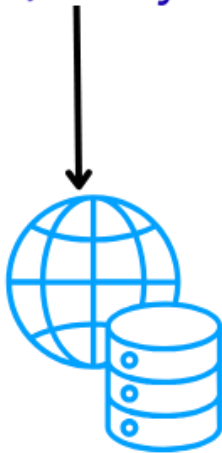
[cacheKey,



]

What to Serve and When?

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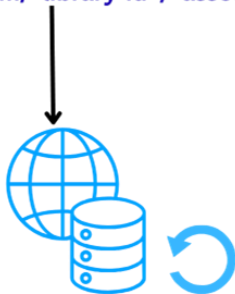
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What to Serve and When?

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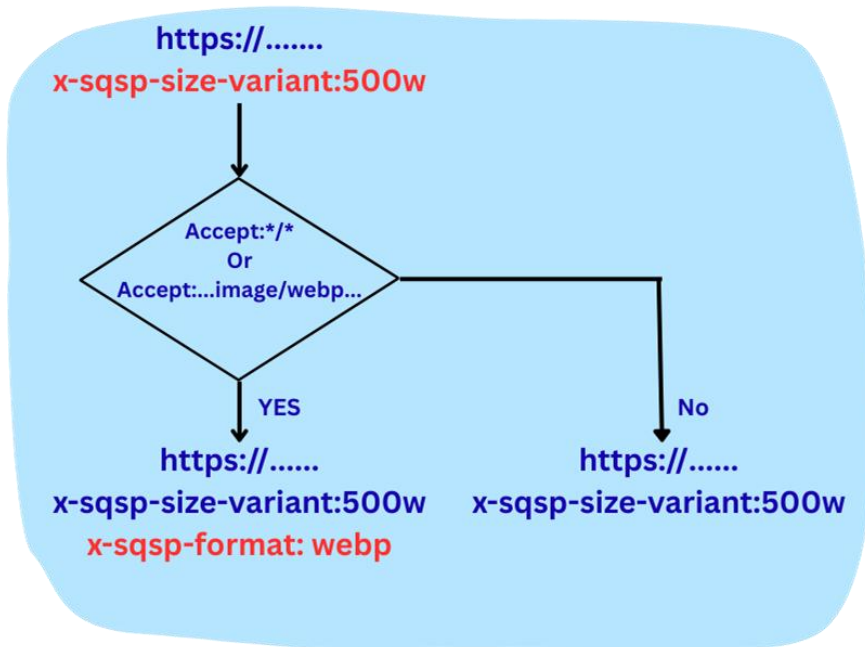
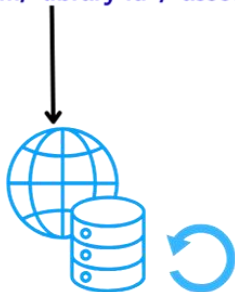


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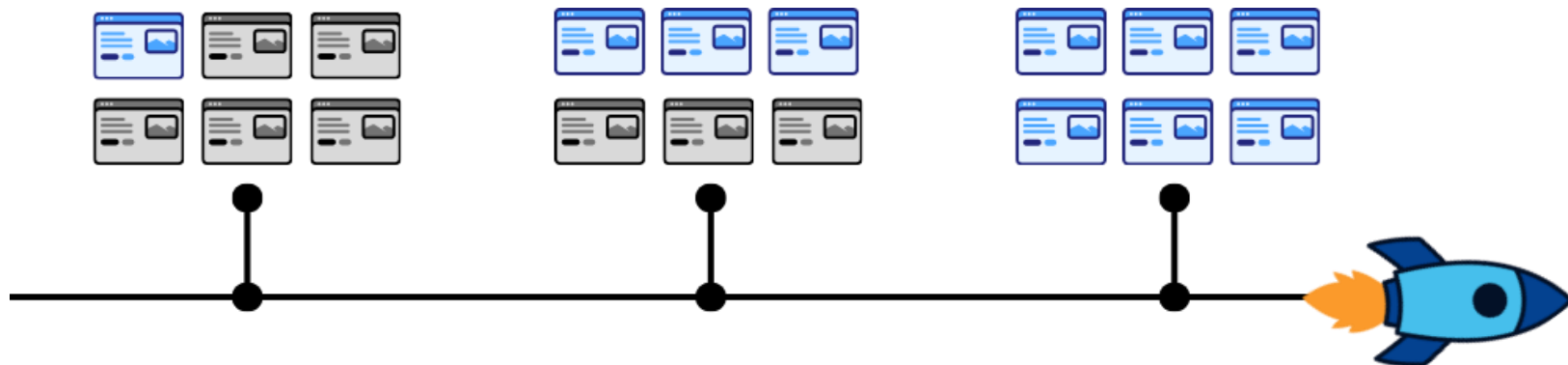
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What to Serve and When?

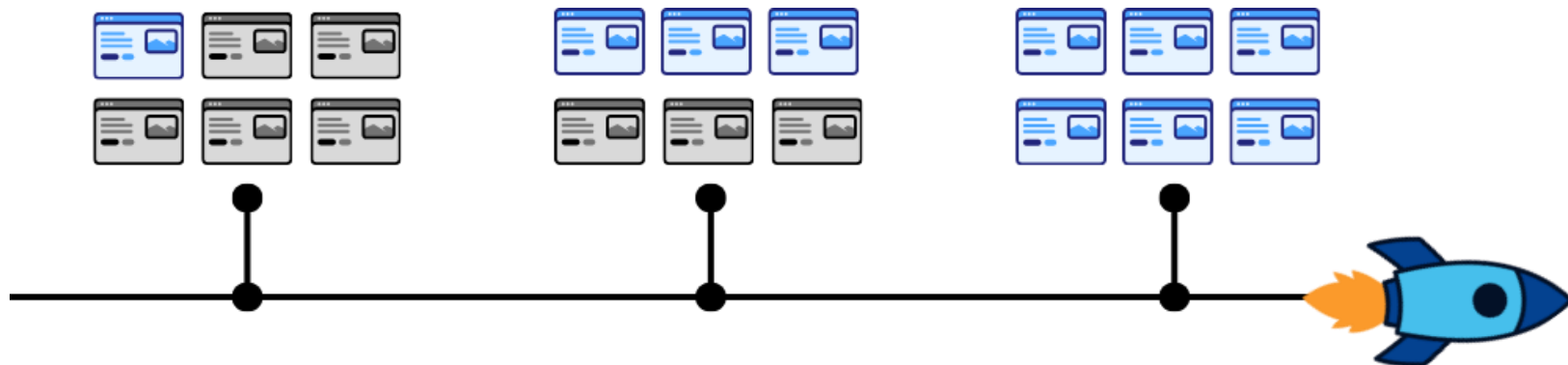
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Rollout



Rollout

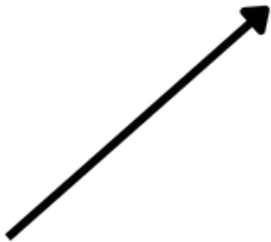




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Rollout

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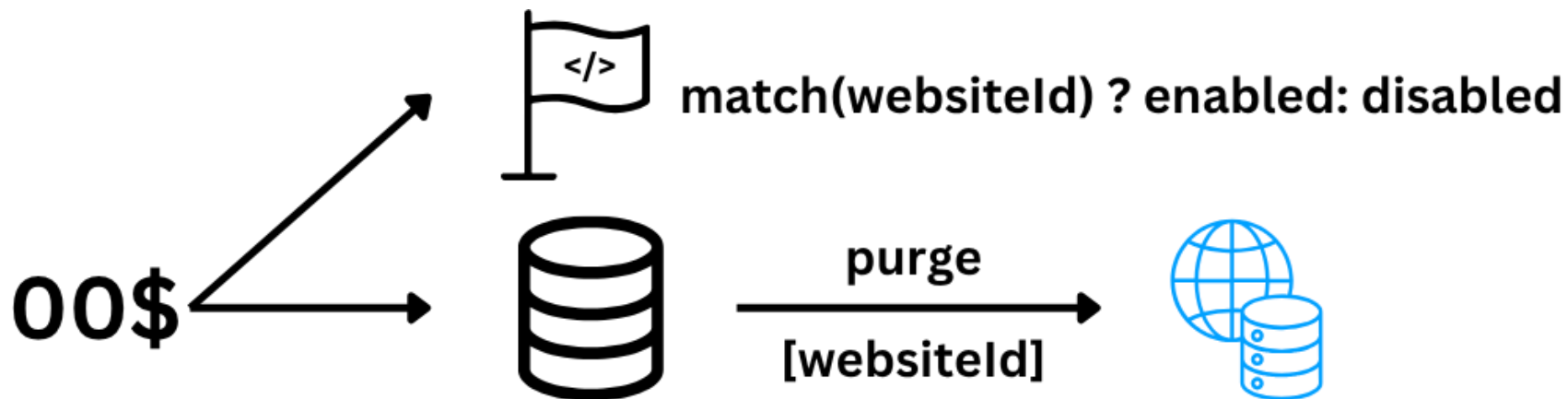


match(websiteId) ? enabled: disabled



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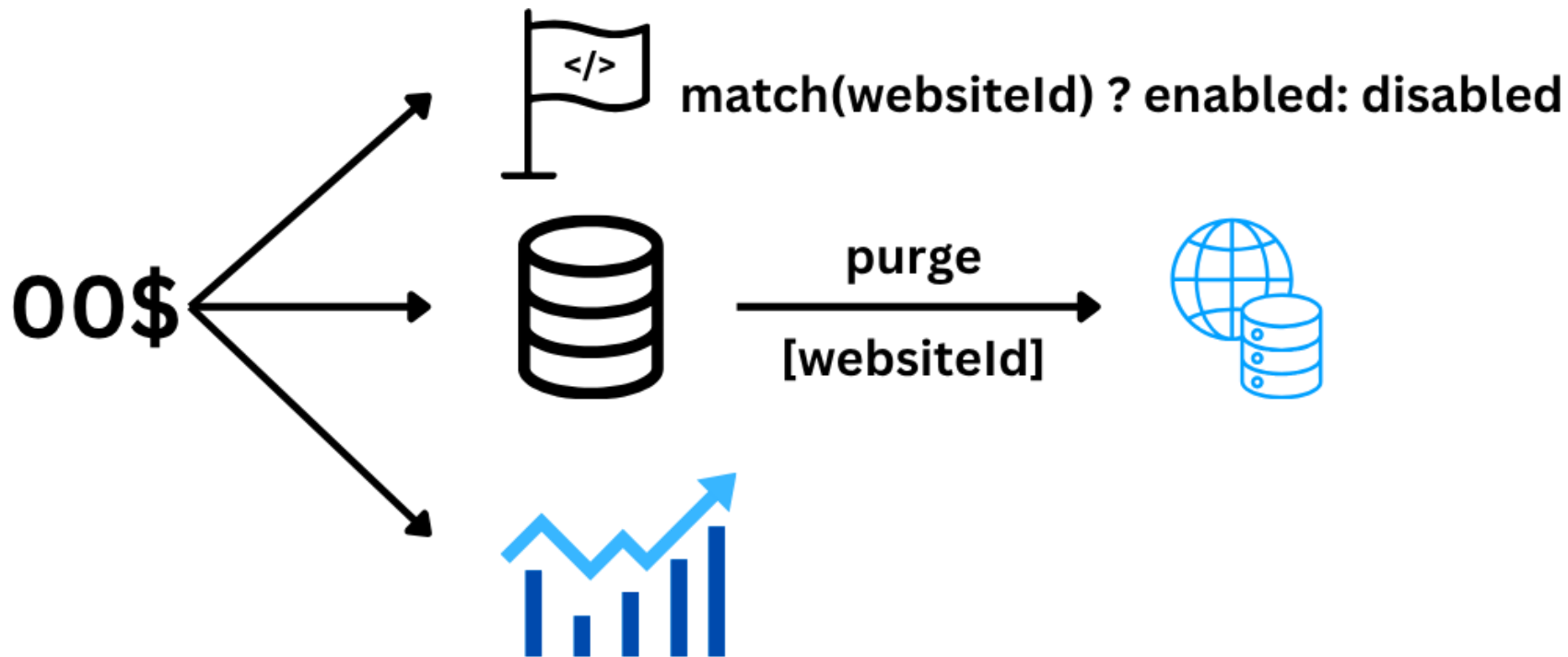
Rollout





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Rollout



Intriguing Discoveries

Older Outlook Clients – HTTP Accept: */*

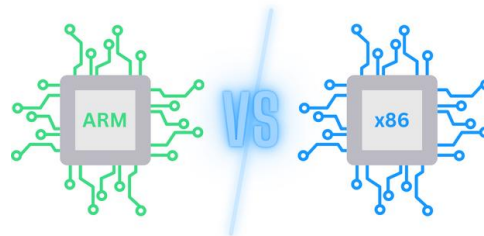


Intriguing Discoveries

Older Outlook Clients – HTTP Accept: */*



Localdev vs Production

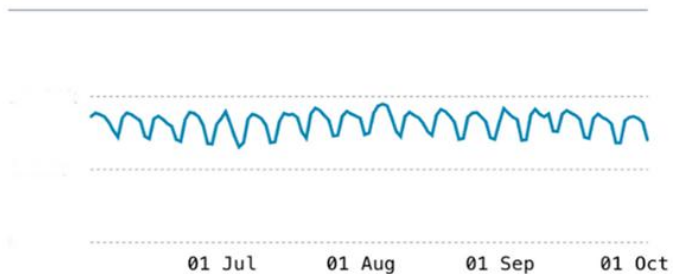




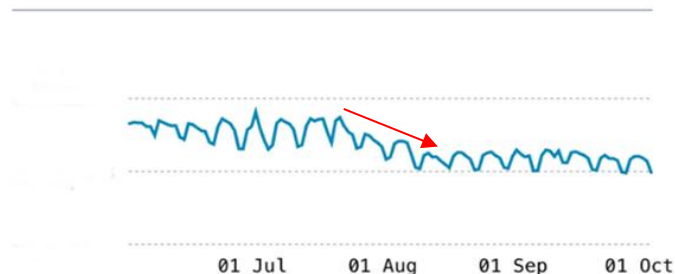
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Results

Requests Per Second



Bandwidth



AVERAGE TIME TO LAST BYTE

-20%

TOTAL BYTES

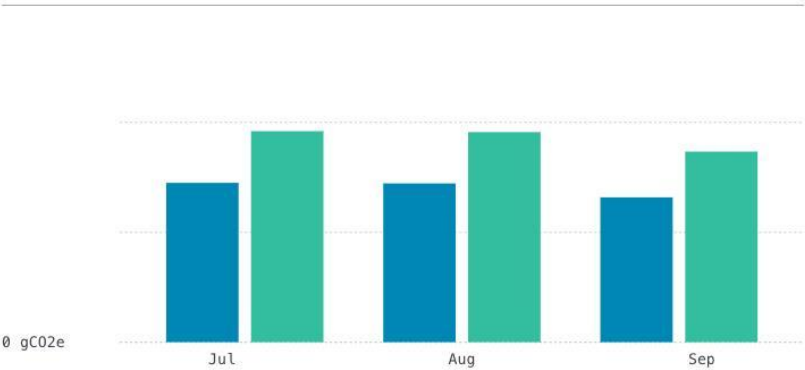
-30%

STORAGE COST

-50%

Results

Electricity-related GHG Emissions



Electricity Consumption



Happy Users

- “Hell yes! I've been waiting for this for ages! This is the value and power of the Feature Requests and we're grateful to have been listened to!”
- “I'm really impressed with how this has been implemented. It's great that design control has been retained, giving us the ability to opt out of WebP conversion is important for sites where precise image rendering matters. It's also reassuring to know that original assets are preserved regardless. [Also,] it's available on both v7.1 and v7.0. Thanks for delivering this much-requested update thoughtfully!”
- Now this is a very exciting moment!!”

Parting Thought



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Parting Thought



Thank you!

