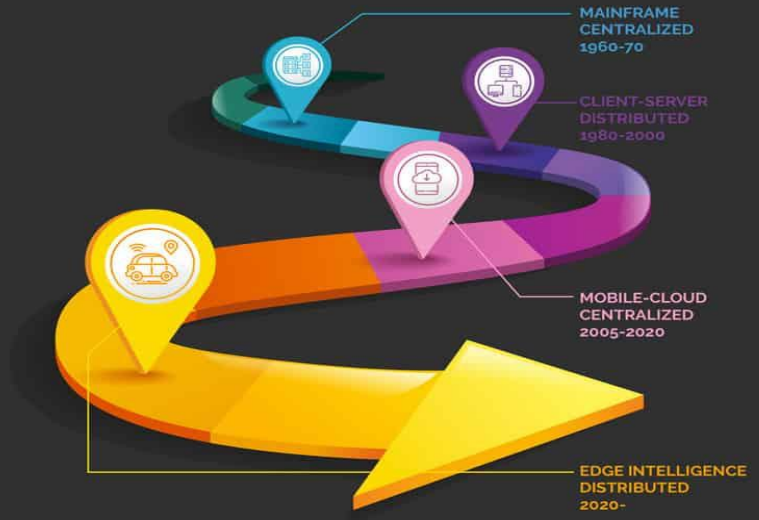
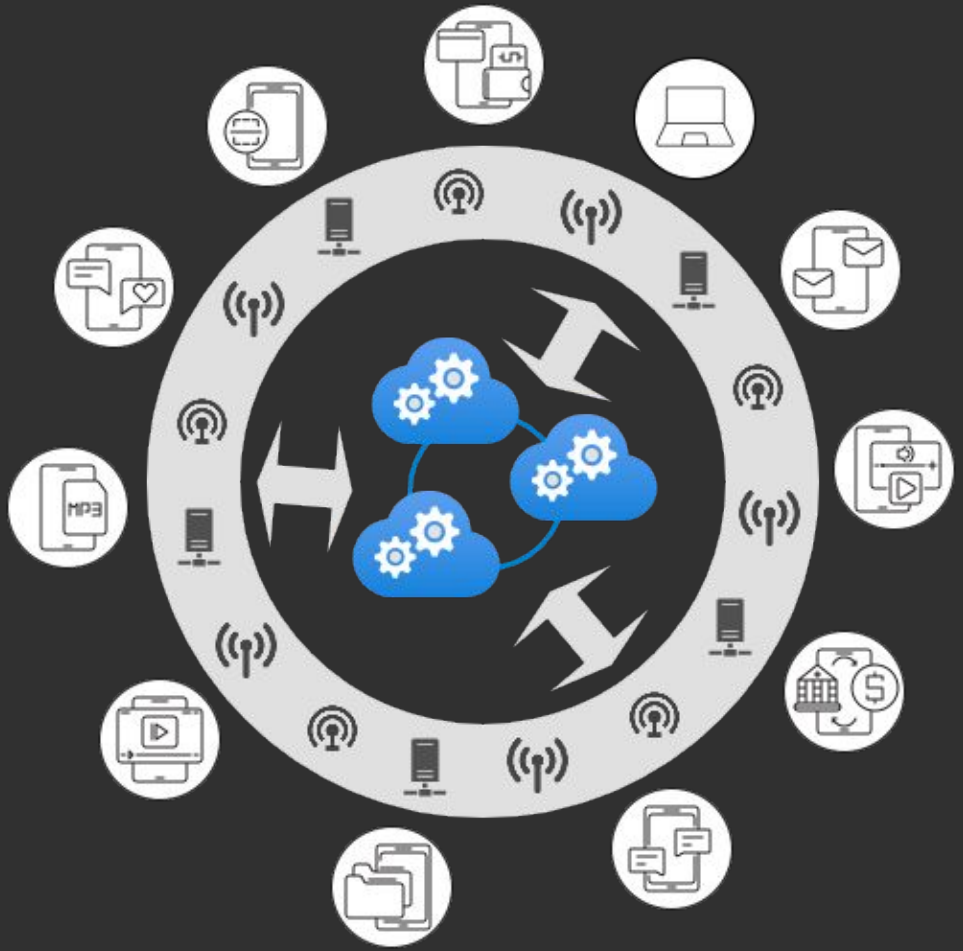
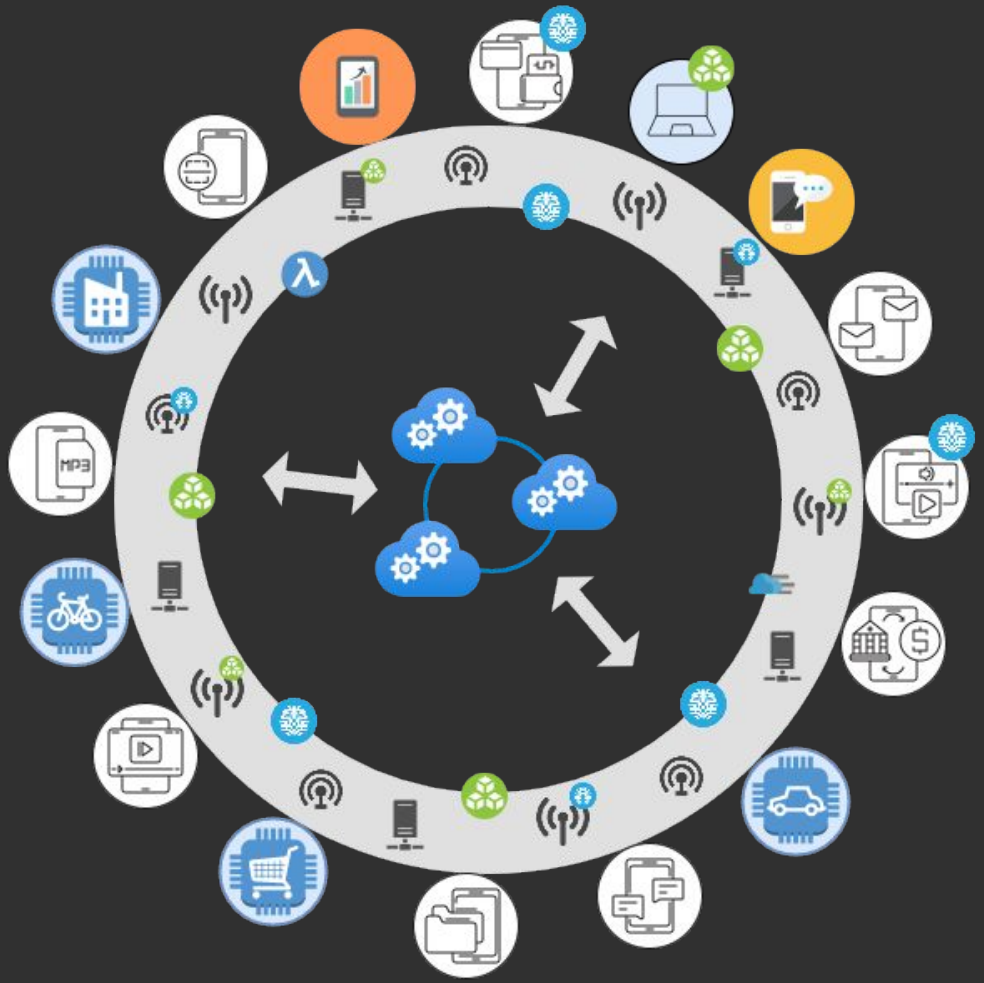
EDGE COMPUTING

Evolução rumo à descentralização

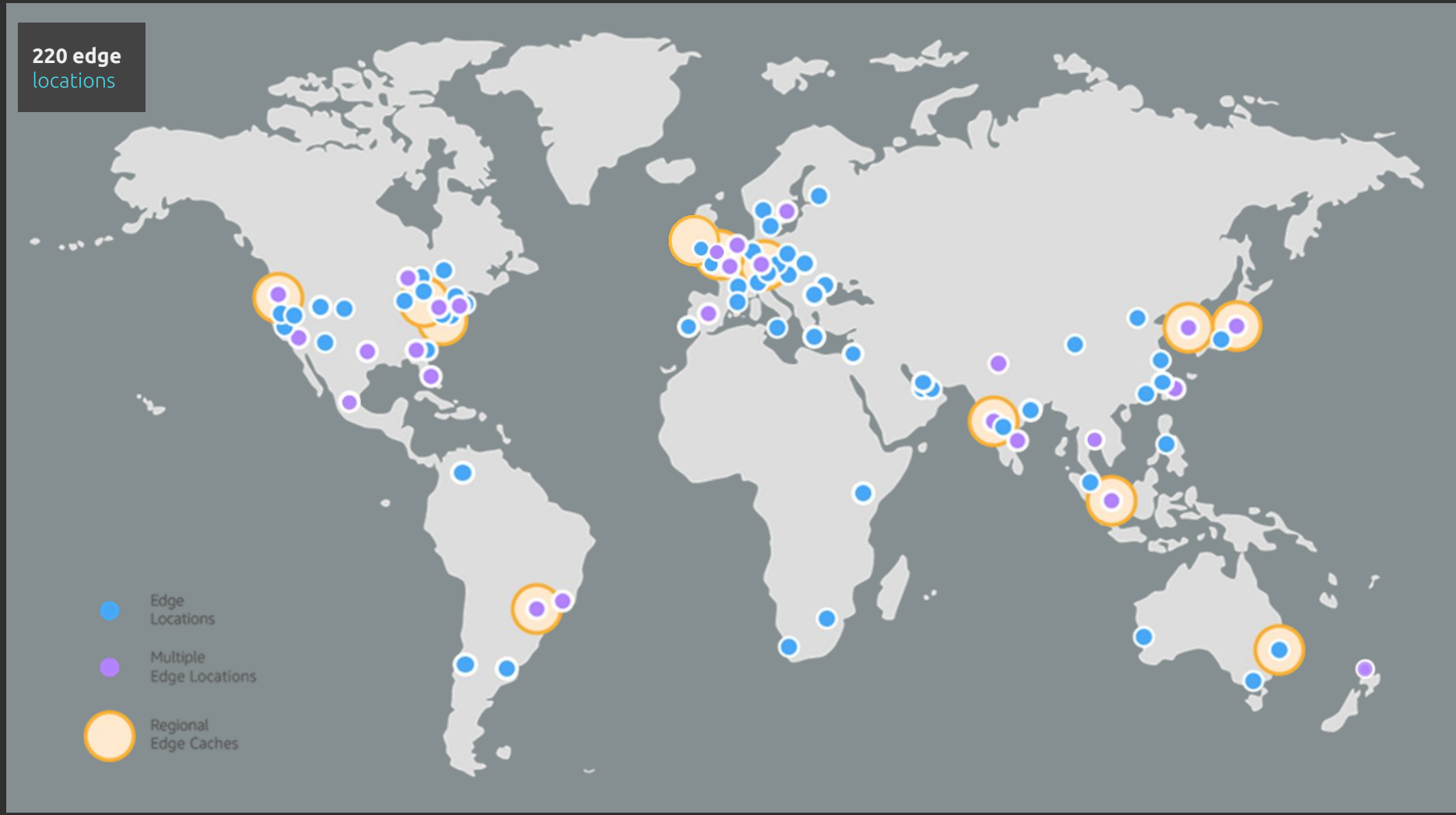


Principais
Características


MP3


MP3

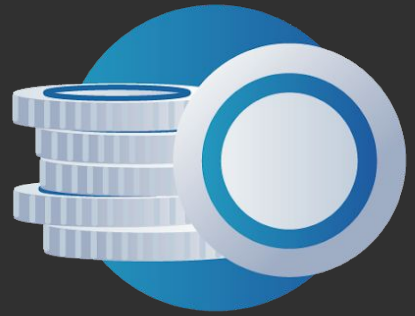
24 Regions
77 AZs


220 edge
locations
Edge
Locations
Multiple
Edge Locations
Regional
Edge Caches

Cloudflare
Workers

Benefícios & Oportunidades

Performance com redução de latência, melhorando a **experiência do usuário**



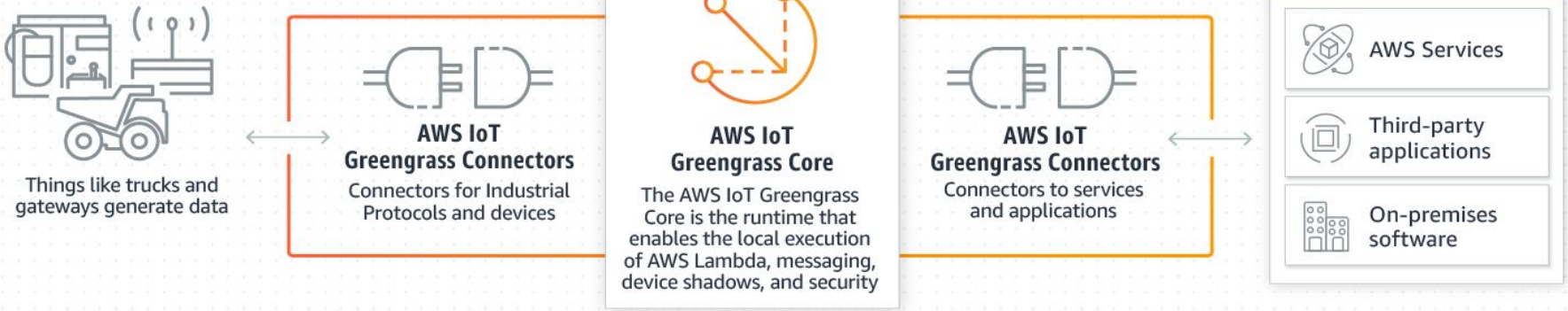
Economia e uso mais eficiente dos recursos reduzindo **tráfego de dados** para a cloud

Viabilização de novos **modelos de negócio** dependentes de decisões e ações em *Near Real Time*

Serviços & Tecnologias

AWS Lambda@Edge

AWS IoT Greengrass



AWS Wavelength

Extend the Amazon Virtual Private Cloud (VPC) to include a Wavelength Zone and then create AWS resources like Amazon Elastic Compute Cloud (EC2) instances in the desired subnets

AWS Region

Wavelength Zone

Deploy the portions of an application that require ultra-low latency in a Wavelength Zone, and then seamlessly connect back to the rest of the application and the full range of cloud services running in the AWS Region

Application traffic can reach application servers running in Wavelength Zones without leaving the mobile network

WebAssembly leva eficiência à
workloads junto ao usuário
Além de fornecer uma *runtime* **IsoMórfica**

CLOUDFLARE®

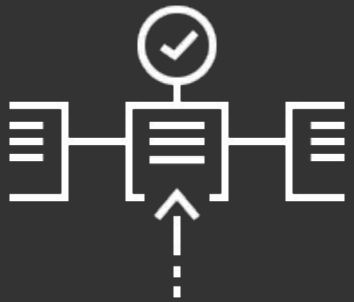
Workers permite executar *functions*
com zero cold start, compiladas para **WebAssembly**
nas mesmas **Edge Locations** usadas para a CDN

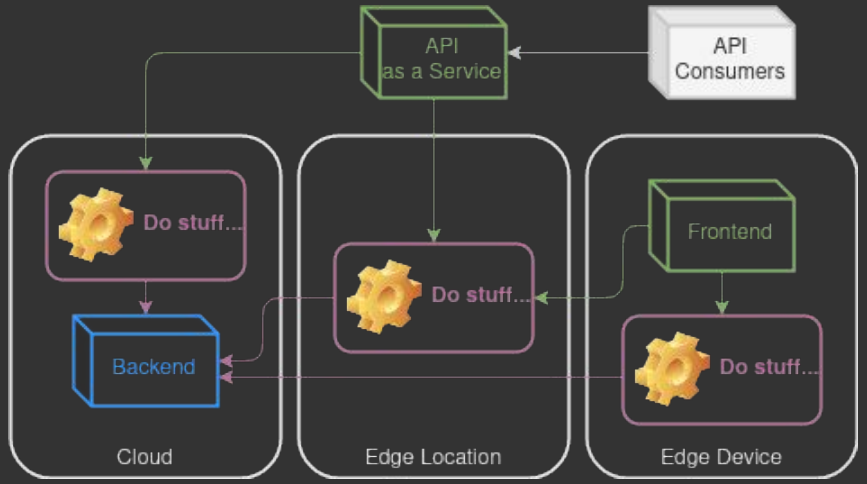
Desafios

Arquiteturais

Tolerância à Partição

Transações & Consistência





Backend vs Frontend

hello, world!

```
┌─artus at arch in /home/artus/Projects/wasm-experiments/rust-hmac-cfw-hello-world (master …16)
└─λ wrangler publish
 Compiling your project to WebAssembly...
[INFO]: Checking for the Wasm target...
[INFO]: Compiling to Wasm...
   Compiling proc-macro2 v1.0.24
   Compiling unicode-xid v0.2.1
   Compiling log v0.4.14
   Compiling wasm-bindgen-shared v0.2.70
   Compiling syn v1.0.60
   Compiling cfg-if v1.0.0
   Compiling bumpalo v3.6.0
   Compiling lazy_static v1.4.0
   Compiling wasm-bindgen v0.2.70
   Compiling cc v1.0.66
   Compiling untrusted v0.7.1
   Compiling cfg-if v0.1.10
   Compiling data-encoding v2.3.2
   Compiling ring v0.16.20
   Compiling quote v1.0.8
   Compiling wasm-bindgen-backend v0.2.70
   Compiling wasm-bindgen-macro-support v0.2.70
   Compiling wasm-bindgen-macro v0.2.70
   Compiling js-sys v0.3.42
   Compiling console_error_panic_hook v0.1.6
   Compiling web-sys v0.3.42
   Compiling rust-hmac-cfw-hello-world v0.1.0 (/home/artus/Projects/wasm-experiments/rust-hmac-cfw-hello-world)
    Finished release [optimized] target(s) in 33.96s
[INFO]: Installing wasm-bindgen...
[INFO]: Optimizing wasm binaries with `wasm-opt`...
[INFO]: Optional fields missing from Cargo.toml: 'description', 'repository', and 'license'. These are not necessary, but recommended
[INFO]: :-) Done in 35.76s
[INFO]: :-) Your wasm pkg is ready to publish at /home/artus/Projects/wasm-experiments/rust-hmac-cfw-hello-world/pkg.
 Build succeeded
 Successfully published your script to
 https://rust-hmac-cfw-hello-world.artus.workers.dev
```

```
artus at arch in /home/artus/Projects/wasm-experiments/rust-hmac-cfw-hello-world (master …15)
λ curl -s 'https://rust-hmac-cfw-hello-world.artus.workers.dev?payload=Alexandre' | jq
{
  "payload": "Alexandre",
  "hmac": "TOQ7L3zcpIqDjBA4fgtXdxTRaJXc4Z3VX4j09WGhkFo="
}
artus at arch in /home/artus/Projects/wasm-experiments/rust-hmac-cfw-hello-world (master …15)
λ curl -s 'https://rust-hmac-cfw-hello-world.artus.workers.dev?payload=Artus' | jq
{
  "payload": "Artus",
  "hmac": "VFMmN2+lNZl105yUbQP1mMGxmqCZR1FVp5OFWQ4peJI="
}
artus at arch in /home/artus/Projects/wasm-experiments/rust-hmac-cfw-hello-world (master …15)
λ curl -s 'https://rust-hmac-cfw-hello-world.artus.workers.dev?payload=Artus' | jq
{
  "payload": "Artus",
  "hmac": "VFMmN2+lNZl105yUbQP1mMGxmqCZR1FVp5OFWQ4peJI="
}
artus at arch in /home/artus/Projects/wasm-experiments/rust-hmac-cfw-hello-world (master …15)
λ
```

?

Obrigado!

_ AWS Global Infrastructure
_ https://aws.amazon.com/pt/about-aws/global-infrastructure/?p=ngi&loc=1
_ Lambda@Edge
_ https://aws.amazon.com/pt/lambda/edge/
_ AWS IoT Greengrass
_ https://aws.amazon.com/pt/greengrass/
_ AWS Wavelength
_ https://aws.amazon.com/pt/wavelength/
_ Cloudflare Workers
_ https://workers.cloudflare.com/
_ Google Cloud - Anthos
_ https://cloud.google.com/anthos
_ Google Cloud - Anthos at the Edge
_ https://cloud.google.com/solutions/anthos-edge
_ Azure Edge Zones
_ https://azure.microsoft.com/pt-br/solutions/low-latency-edge-computing/#overview
_ Azure Stack Edge
_ https://azure.microsoft.com/pt-br/products/azure-stack/edge/
_ Announcing Lucet: Fastly's native WebAssembly compiler and runtime
_ https://www.fastly.com/blog/announcing-lucet-fastly-native-webassembly-compiler-runtime