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Accelerate AI with Cloud Run

Running your model or agent serverlessly

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https://linq.es/giulianobr

+ 20 years in the market

+ 10 years in the Cloud

Software Development, Software Architecture, Automation, DevOps, Cloud, FinOps

Giuliano Ribeiro

Cloud Architect
Google Cloud Architect/DevOps

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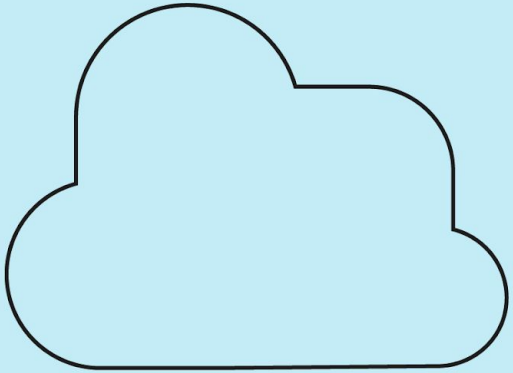
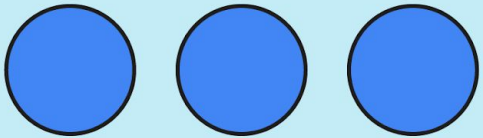
The Problem: AI Deployment Gap





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Cost

Complexity

Scalability

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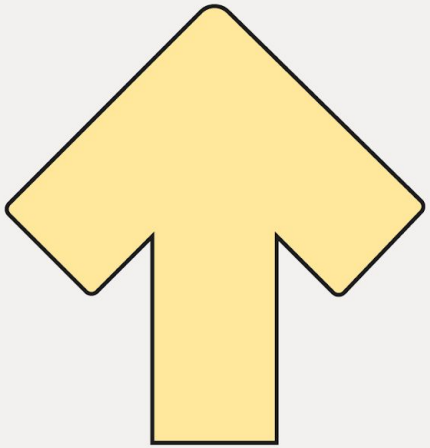

- The Traditional Way (and its pains)
- A Better Way
- Live Demo: Deploying the Gemma LLM with Ollama in minutes
- The Benefits
- When not to use it
- Q&A

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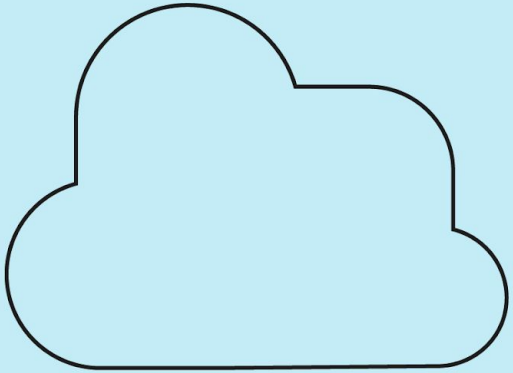

The "Traditional" Approach

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The "Traditional" Approach

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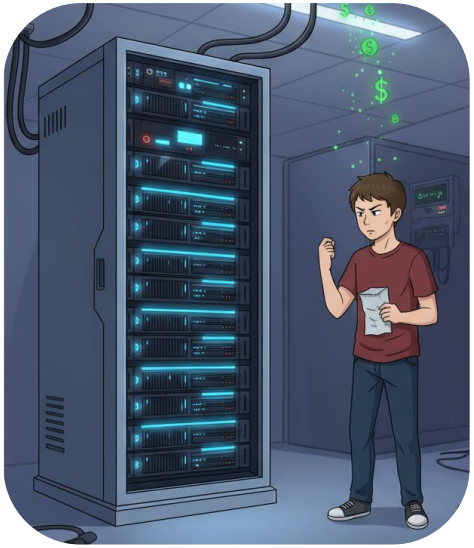
Why this is painful for AI



Wasted GPU Costs

No flexibility

DevOps Overhead

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What if you could just focus on your code and let Google handle the rest?

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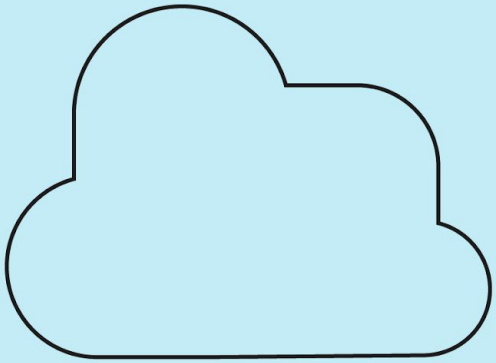

Cloud Run

Benefits of Cloud Run

Higher Velocity & Productivity.
Cloud Run allows developers to spend more time **writing code** and **less** time managing **infrastructure**.

Higher Reliability.
Cloud Run is **redundant** by default. Google is your SRE.

Lower Cost.
Cloud Run **autoscales** to meet your needs and scales to **zero**. Pay only for what you use.

95% faster deployment than legacy platforms

98% fewer interruptions to service

15% - 50% cheaper than provisioned platforms

75% cheaper than on-prem

“

Our initial concern about choosing serverless was cost.

It turns out that using **Cloud Run is significantly more cost-effective than running the number of VMs** we would need for a system that could survive reasonable traffic spikes with a similar level of confidence.

BBC

Cloud Run with GPUs

- On-demand
- Hyper-elastic
- Fast starting
- Pay by the second

Live Demo

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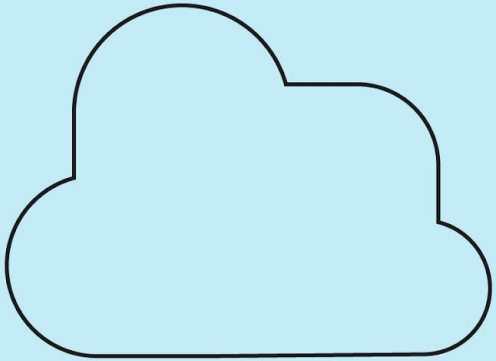
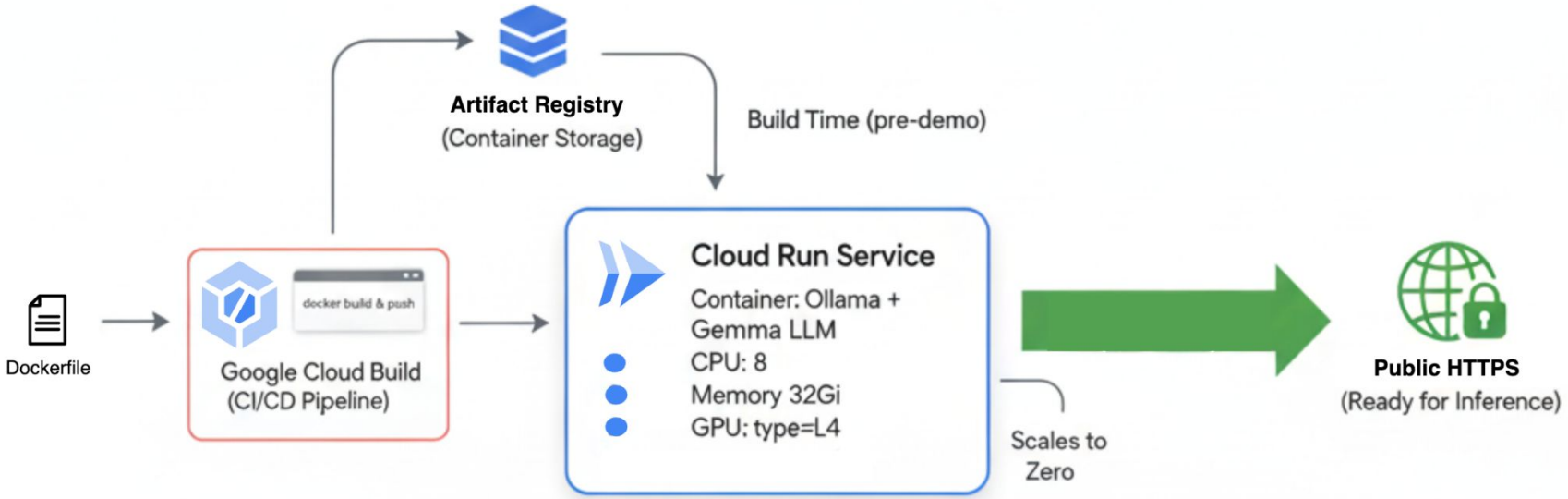


Demo Architecture



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Dockerfile

```
FROM ollama/ollama:latest
# Listen on all interfaces, port 8080
ENV OLLAMA_HOST 0.0.0.0:8080
# Store model weight files in /models
ENV OLLAMA_MODELS /models
# Reduce logging verbosity
ENV OLLAMA_DEBUG false
# Never unload model weights from the GPU
ENV OLLAMA_KEEP_ALIVE -1
# Store the model weights in the container image
ENV MODEL gemma3:4b
RUN ollama serve & sleep 5 && ollama pull $MODEL
# Start Ollama
ENTRYPOINT ["ollama", "serve"]
```

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Gcloud run deploy

```
gcloud run deploy gemma3 \
   --image us-docker.pkg.dev/cloudrun/container/gemma/gemma3-4b \
   --concurrency 4 \
   --cpu 8 \
   --set-env-vars OLLAMA_NUM_PARALLEL=4 \
   --gpu 1 \
   --gpu-type nvidia-l4 \
   --max-instances 1 \
   --memory 32Gi \
   --no-allow-unauthenticated \
   --no-cpu-throttling \
   --no-gpu-zonal-redundancy \
   --timeout 600 \
   --region europe-west4 \
   --project your-project
```

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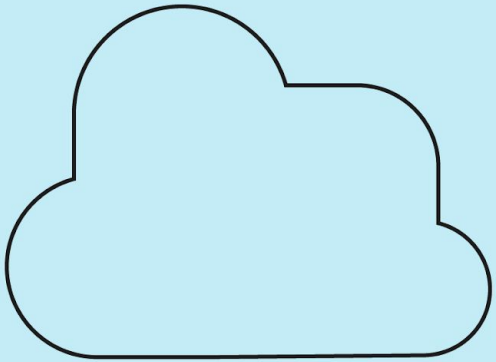
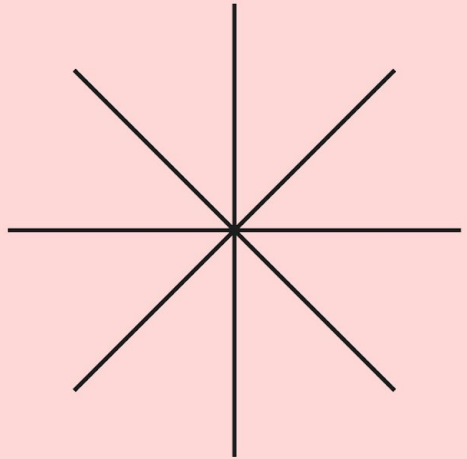
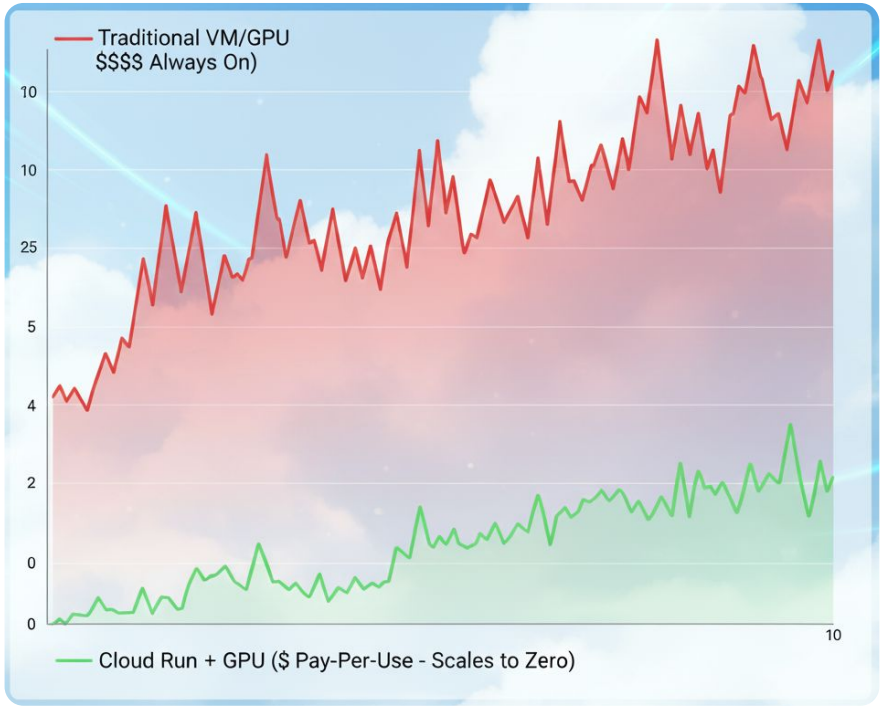
Live Demo



The Impact & Nuances



The Impact: What this means for you



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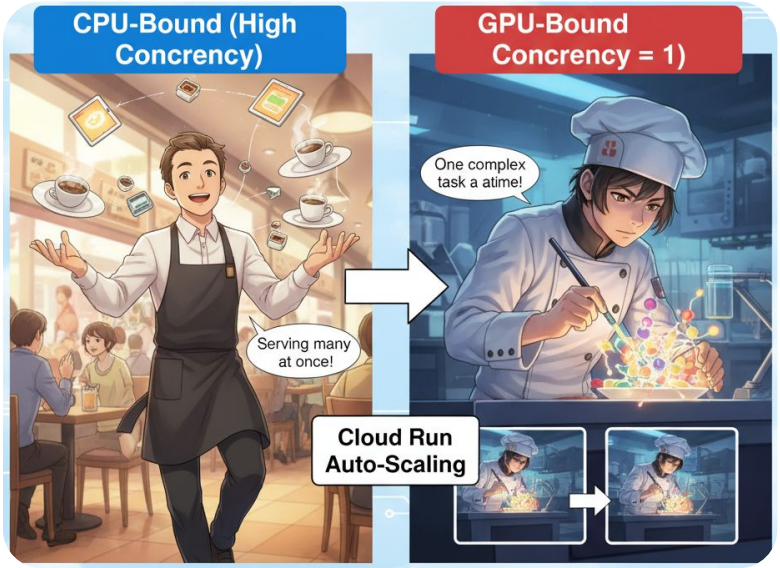
It's Not Magic: How Concurrency Works

80

Concurrency on webapp



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Concurrency on GPU-bound service

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When is Cloud Run NOT the right choice?

- Not for long-running
- Constant High Traffic
- Stateful Workloads

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Conclusions
&
Q&A

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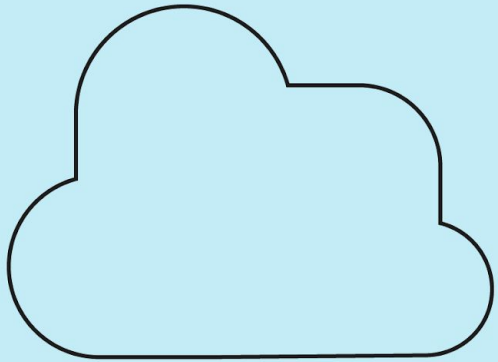

Key Takeaways

- Stop Paying for Idle GPUs
- Simplify Your Ops
- Build for Scale from Day One

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Thank you!

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