



CRATE.IO



INTERNET OF THINGS AND THEIR REQUIREMENTS

THE SOLUTION THAT
CRATE.IO OFFERS

PRESENTATION'S OVERVIEW

- The problems that the IoT industry faces
- Features of CrateDB
- Real use cases of CrateDB
- Common solution architecture the associated complexities and problems
- Similar solution architecture but with the CrateDB this time
- Live demo
- Q&A



PROBLEMS WITH THE IOT

- Huge amount o data
 - Millions of data per second from a number of different devices, sensors, data centres, logs, cameras, watches, etc
- Data diversity
 - Could be structured (ie. JSON) and unstructured data (ie. images & videos)
- Real time query performance
- Monitoring and alerting
- Complex queries that include terabytes of historic data
- Scalability & growth. All the previous problems are constantly getting bigger

FEATURES OF CRATEDB (1)

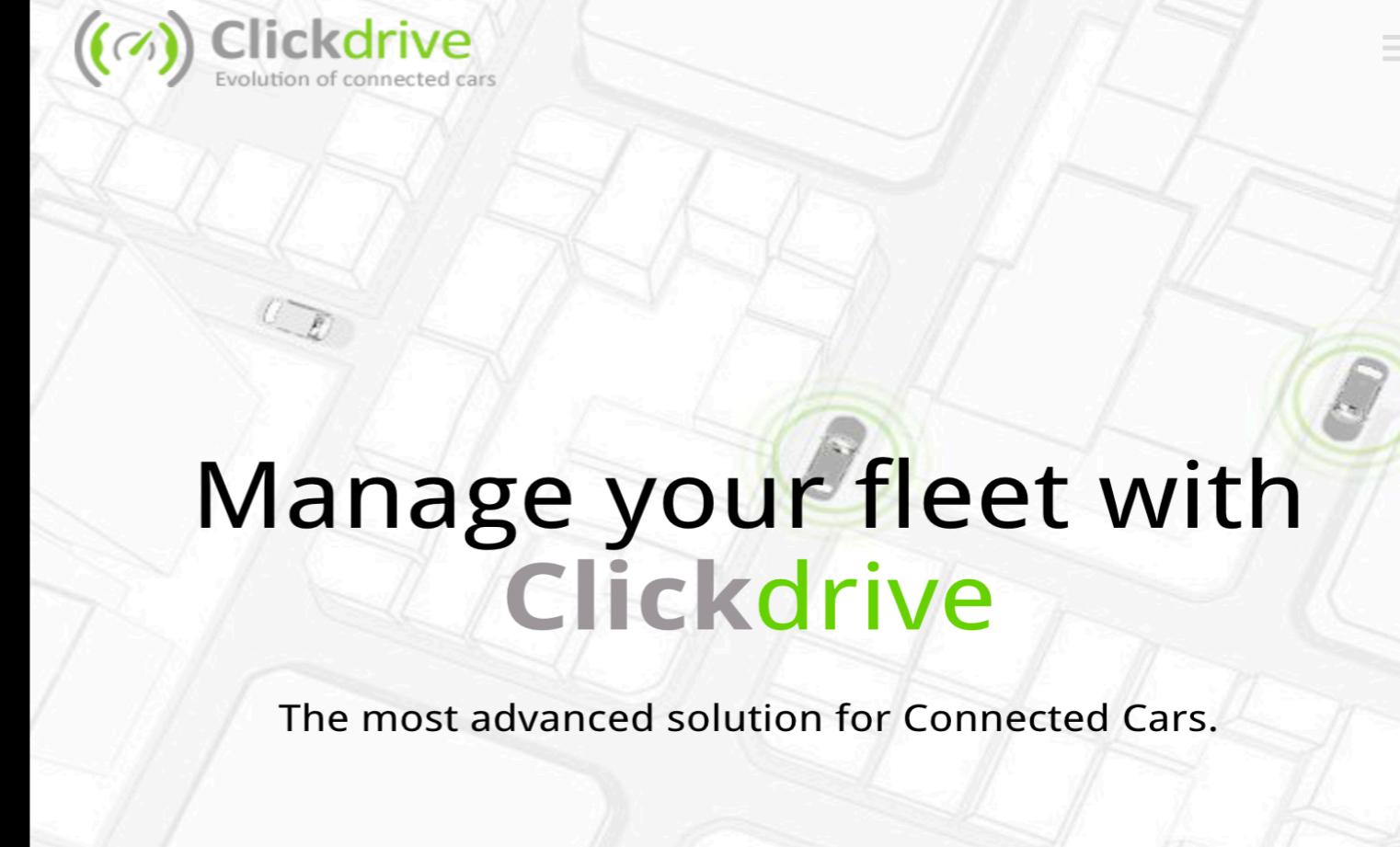
- Scalable. Automatic data rebalancing
- Shared nothing architecture (no special master node)
- Distributed SQL queries aggregations and search
- Highly available
- Real time ingestion
- Any data and BLOBs

FEATURES OF CRATEDB (2)

- Time series analysis
- Geospatial queries (includes geo_point and geo_shape types)
- Dynamic schemas
- Transactional (eventually consistent). Atomic at row level
- Backups
- Openness and flexibility

REAL USE CASES OF CRATEDB

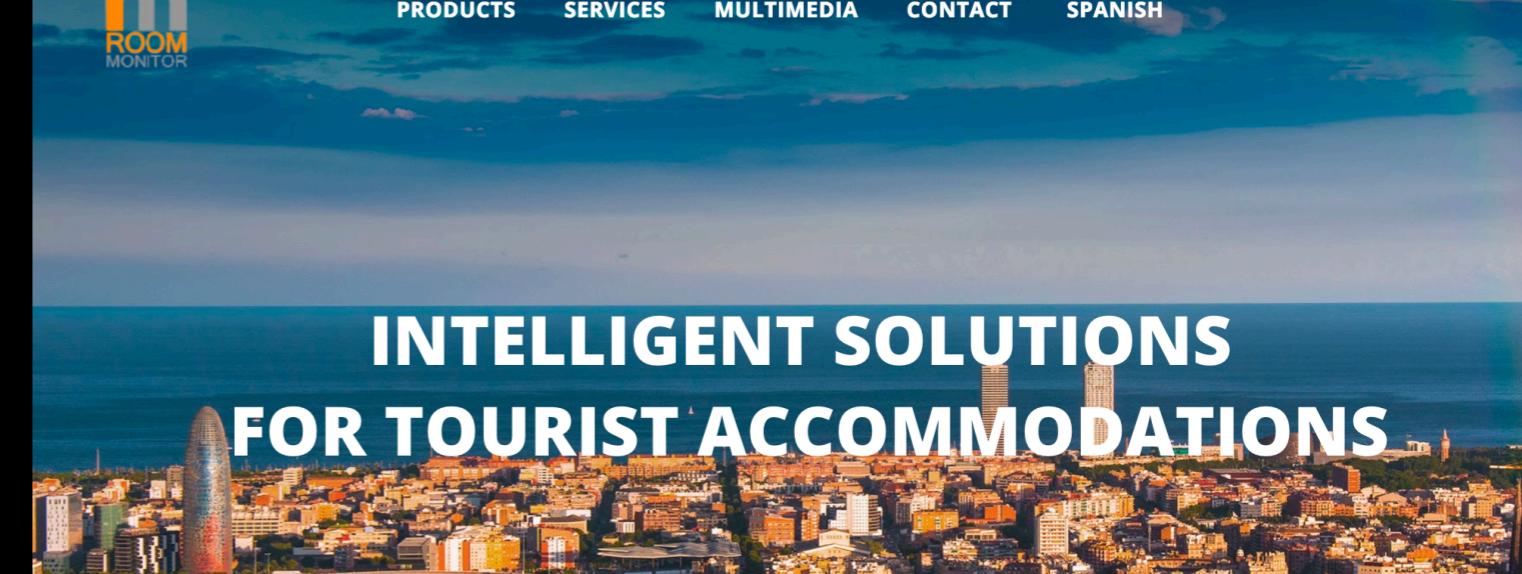
- clickdrive.io: 2k data points per car/second
- skyhighnetworks.com: monitors logs, clouds, data centres etc
- roomonitor.com: Monitors noise, possible incidents, a/c etc



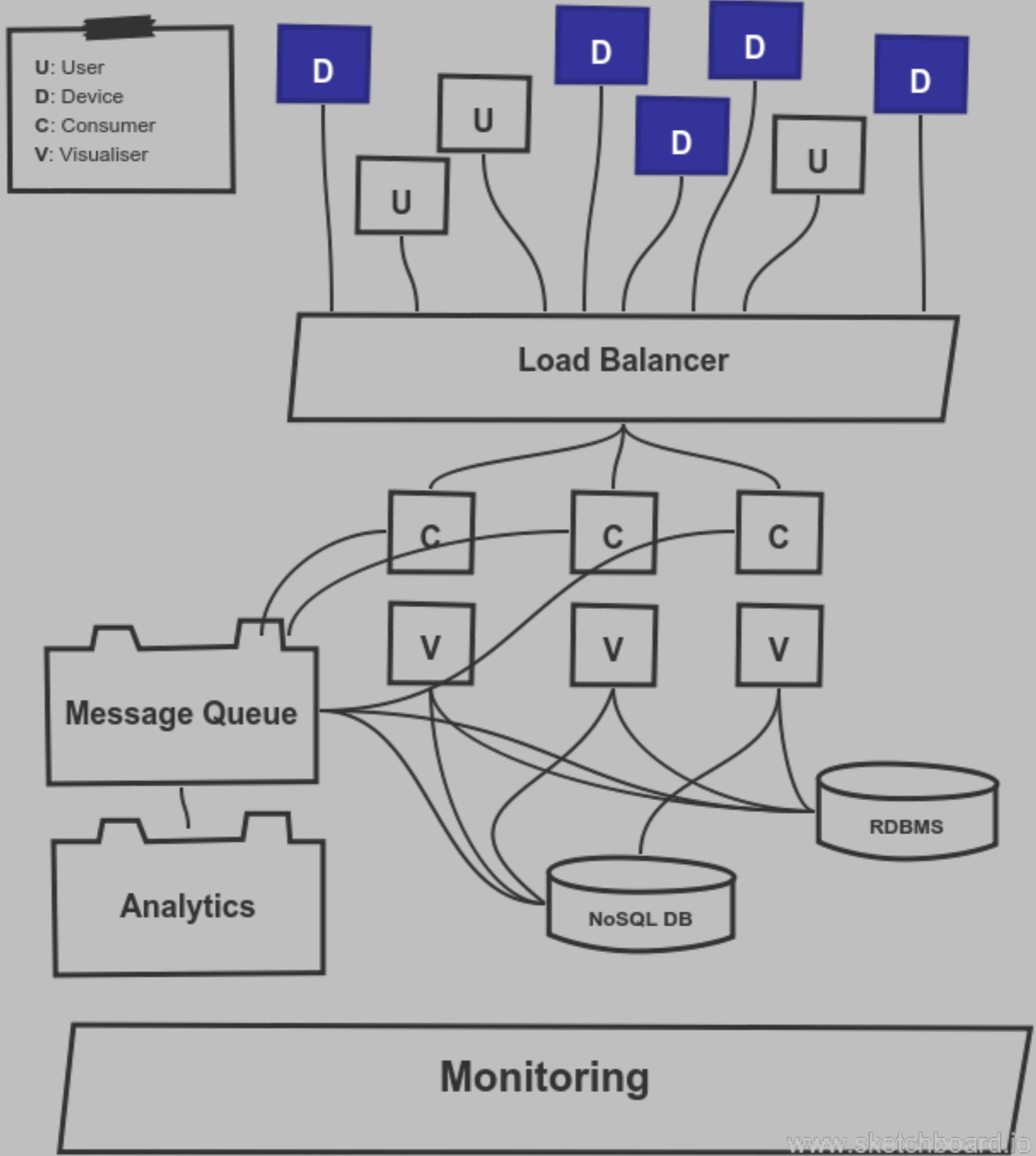
The Clickdrive website features a map background showing vehicle locations. The logo 'Clickdrive Evolution of connected cars' is at the top left. The main heading 'Manage your fleet with Clickdrive' is prominently displayed, followed by the subtext 'The most advanced solution for Connected Cars.'



The Skyhigh Networks website has a dark blue header with the logo 'skyhigh'. It includes navigation links for Product, Customers, Partners, Resources, and Company. Below the header, a large image of a smartphone displaying a dashboard interface is shown, with the text 'Cloud Access Security Broker' overlaid. A descriptive paragraph explains that Skyhigh enables organizations to enforce security, compliance, and governance policies across all cloud services, all users, and all devices.

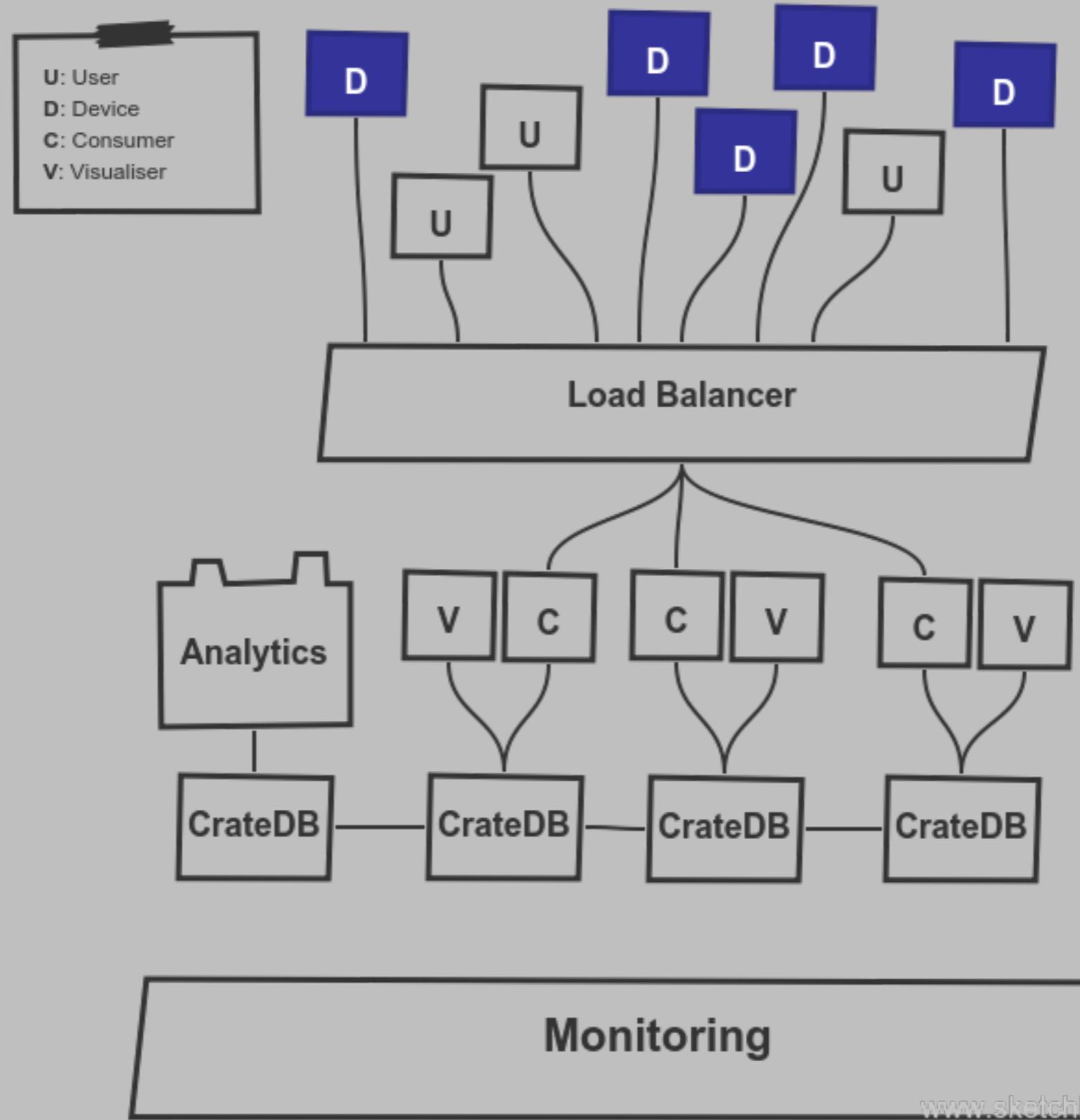


The Roomonitor website has a dark blue header with the logo 'ROOM MONITOR'. It includes navigation links for PRODUCTS, SERVICES, MULTIMEDIA, CONTACT, and SPANISH. Below the header, a large image of a coastal city skyline is shown, with the text 'INTELLIGENT SOLUTIONS FOR TOURIST ACCOMMODATIONS' overlaid.



THE PROBLEMS

- Lot of network connections
- Relying on the message queue
- Duplicate data (queue + DBs)
- SQL DB does not scale horizontally as easy as the NoSql DB
- Access control
- Monitoring



THE ADVANTAGES

- Simplified design (reduced technology stack)
- Consumers and Visualisers talk to the localhost
- Live reporting: Use ad-hoc queries on the production data
- No single point of failure
- No message queue
- DB isolation since it is accessible only from the localhost
- Scales horizontally almost linearly

A scenic mountain landscape at sunset. In the foreground, a bright orange tent is set up on a rocky, grassy slope. Behind it is a large, dark lake reflecting the sky. The background features a range of mountains with patches of snow and ice. The sky is a vibrant mix of blue, purple, and pink, with wispy clouds. The overall atmosphere is peaceful and outdoorsy.

LIVE DEMO
and
<https://play.crate.io/#/>



Q & A



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