



Off the Chain

Enriching blockchain data with real time event streaming

GM Current 22



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Previously: Splunk, Experian
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What are we covering today



1. The State of Blockchain

2. Why Blockchain vs Kafka?

3. Building with Blockchains and Kafka

4. What we Built

5. Learnings + Q&A

Blockchain in 2022



\$8.3B Market Opportunity, 34% CAGR

EU and US Legislation on digital assets

\$17.5 B of Project and VC Funding in 2022

“The Merge”, September 15th 2022

A tale of two logs



A tale of two logs



Immutable

Highly Available

“The humble log is an abstraction that lies at the heart of many systems, from NoSQL databases to cryptocurrencies.”
-Jay Kreps, I ❤️ Logs

Distributed

Real time

So where do they differ?



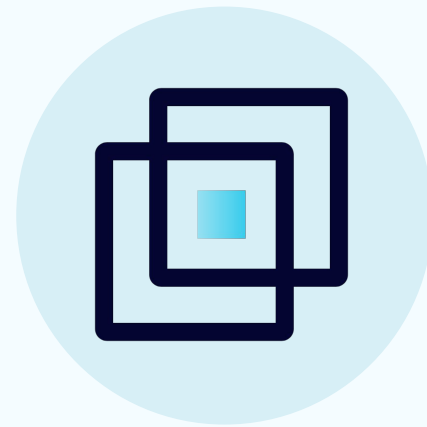
Blockchains

- Increase the data security
 - Tamper “proof”, vastly more difficult to change
- Truly distributed
 - Cross organizations, borders, business
- Encrypted Payloads

Apache Kafka

- Ease of Integration
- High Volume processing of data
 - Millions of messages a second
- Use case flexibility
- Scalability

How does this drive differences in our architectural design?



Immutability



Trust



Real Scale



Real Time

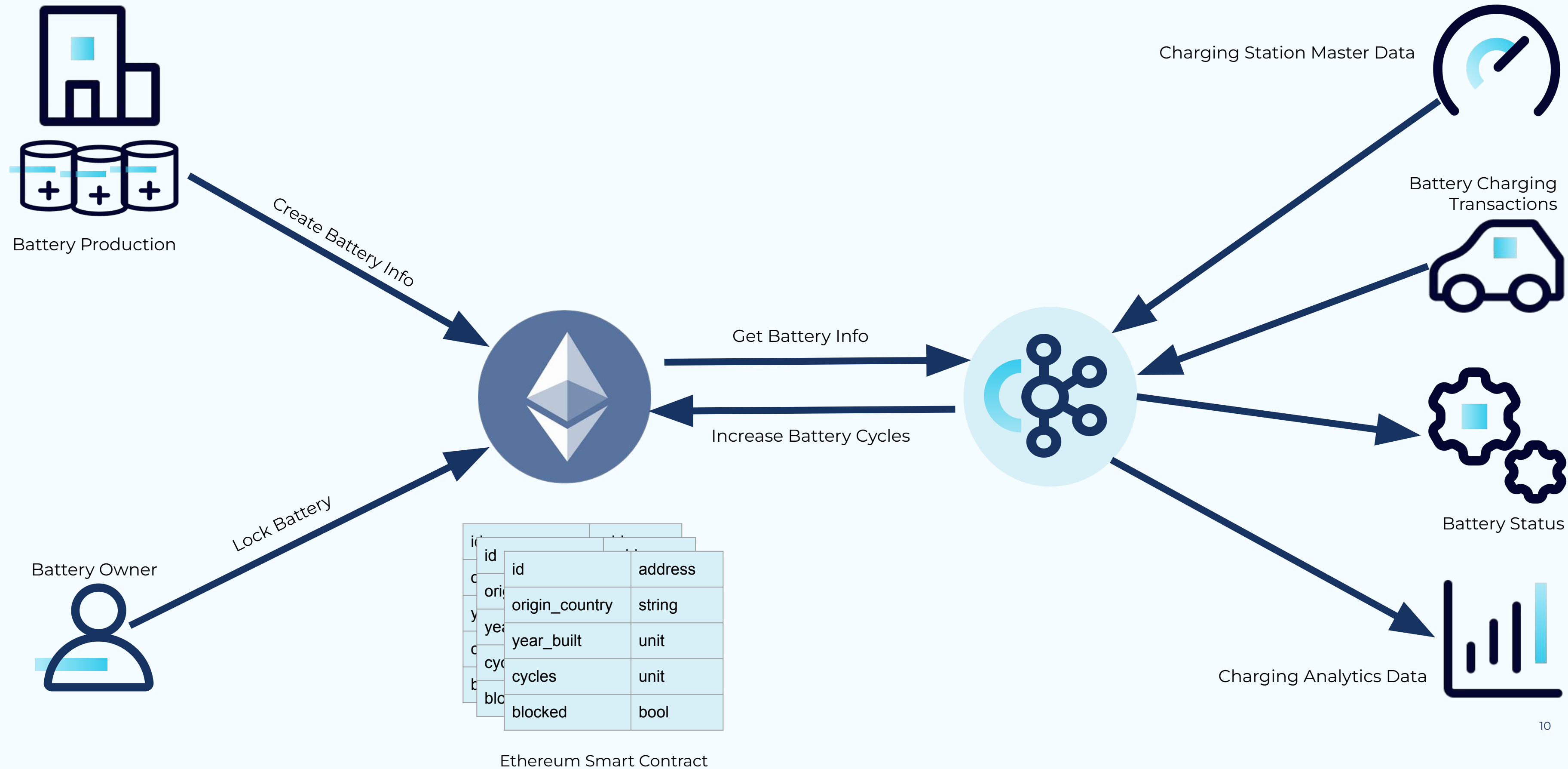
Blockchains

Apache Kafka

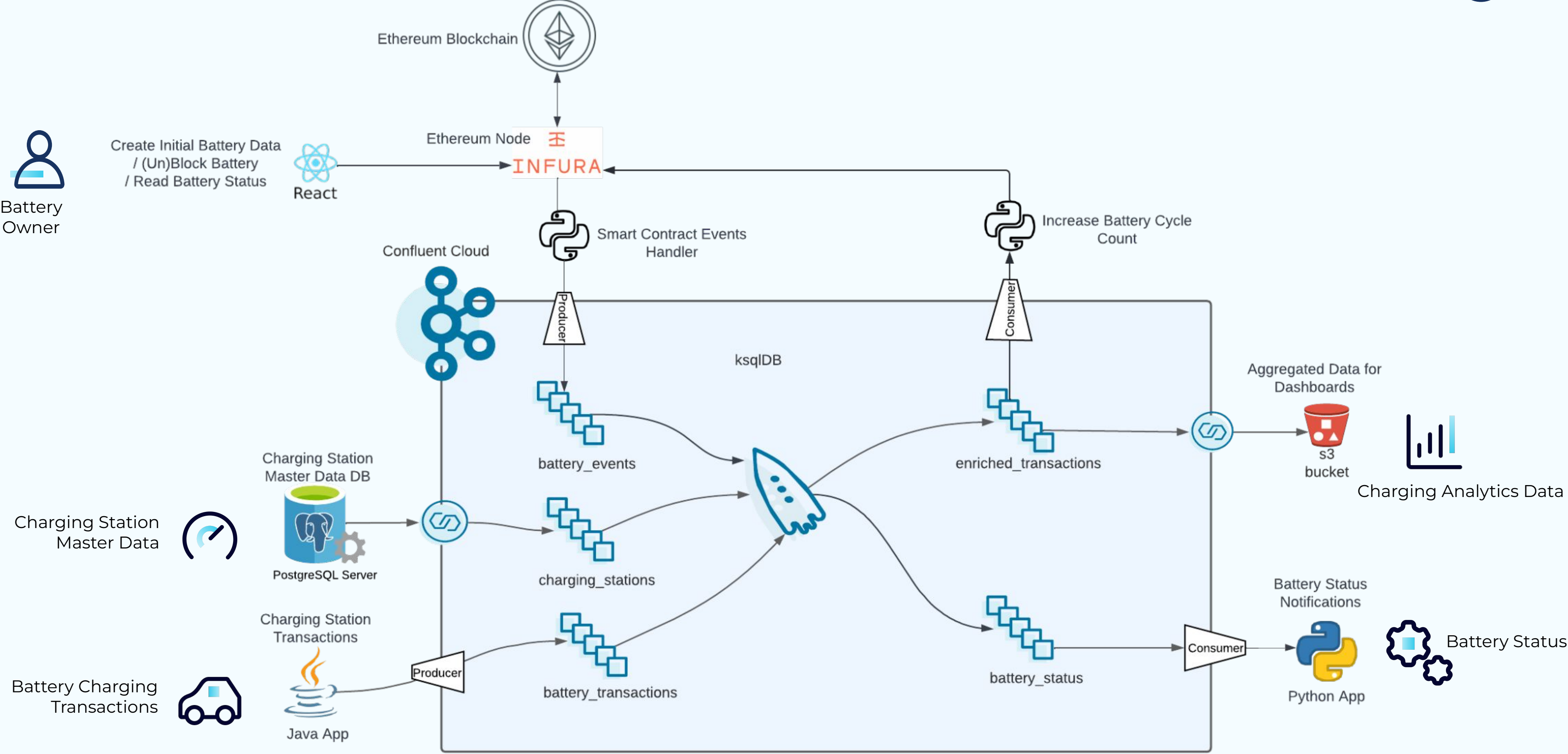


Hands On Demo

Understanding the Build - Use Cases



Understanding the Build - Architecture



Live Demo

CONFLUENT

Stream Catalog

Cluster Overview

Topics

Data integration

Stream Lineage

ksqlDB

Schema Registry

1

```
select * from BATTERYSTATUS_TABLE EMIT CHANGES;
```

Add query properties

auto.offset.reset = Earliest

+Add another field

Running... Stop

Data structure

TABLE

Total messages

--

Messages/sec

--

Total message bytes

--

Message fields

The above statistics are computed for the query source.

ACCOUNT

YEAR_BUILT

Filter by keyword

	ACCOUNT	YEAR_BUILT	COUNTRY_ORI...	CHARGE_CYC...	BLOCKED
<input type="checkbox"/>	0xd8f31caCEDc...	1979	Czech	118	false
<input type="checkbox"/>	0x60dCA855097...	1984	Japan	88	false
<input type="checkbox"/>	0x13e4857a5871...	2015	UK	104	false
<input type="checkbox"/>	0x050d1c91287E...	2030	India	95	false
<input type="checkbox"/>	0xd8f31caCEDc...	1979	Czech	117	false

<https://github.com/griga23/chargingWeb3>

My Battery ID:
4857a58718d085f277b8AEd50B0E300289132

My Battery Data:

- 2015
- UK
- 104
- false

Get Battery Info

Lock Battery Unlock Battery

Battery Data has been found

Connected

Car Battery 4

0x13e...9132

0.5998 GoerliETH

Buy Send Swap

Assets Activity

Contract Interaction

Sep 20 · localhost:3000

-0 GoerliETH

Contract Interaction

Sep 20 · localhost:3000

-0 GoerliETH

Why We Chose...



Solidity

Who owns the data?

Who can see the data?

Who can change against my details?



KSQLDB

What questions do we need to ask the streams?

How easily can we abstract away complexity for building a prototype?



Kafka

How can ingesting real time data be accelerated?

What does the fan-out of our data look like?



Learnings



Any Questions? Please Ask!



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