

YOUR APP, THEIR DATA

Local-first with Evolu

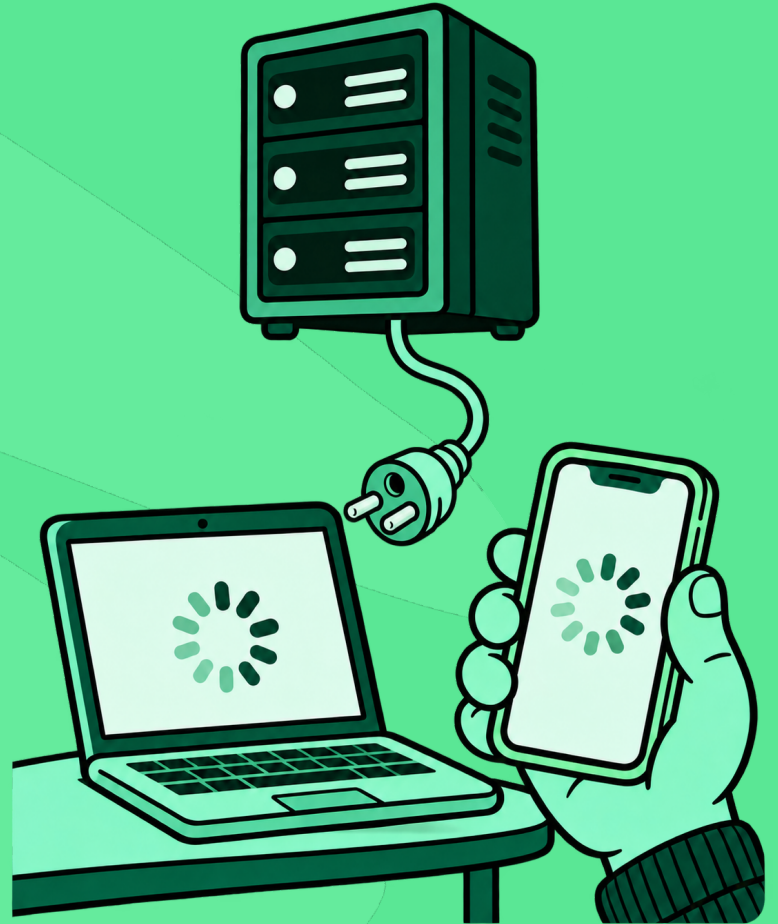
Matěj Kříž / Trezor



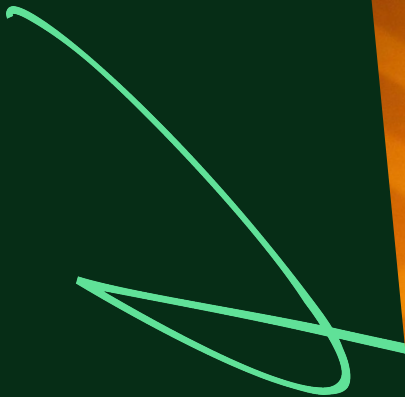
Your servers are gone

What can your users still do?

Read?
Modify?
Export?



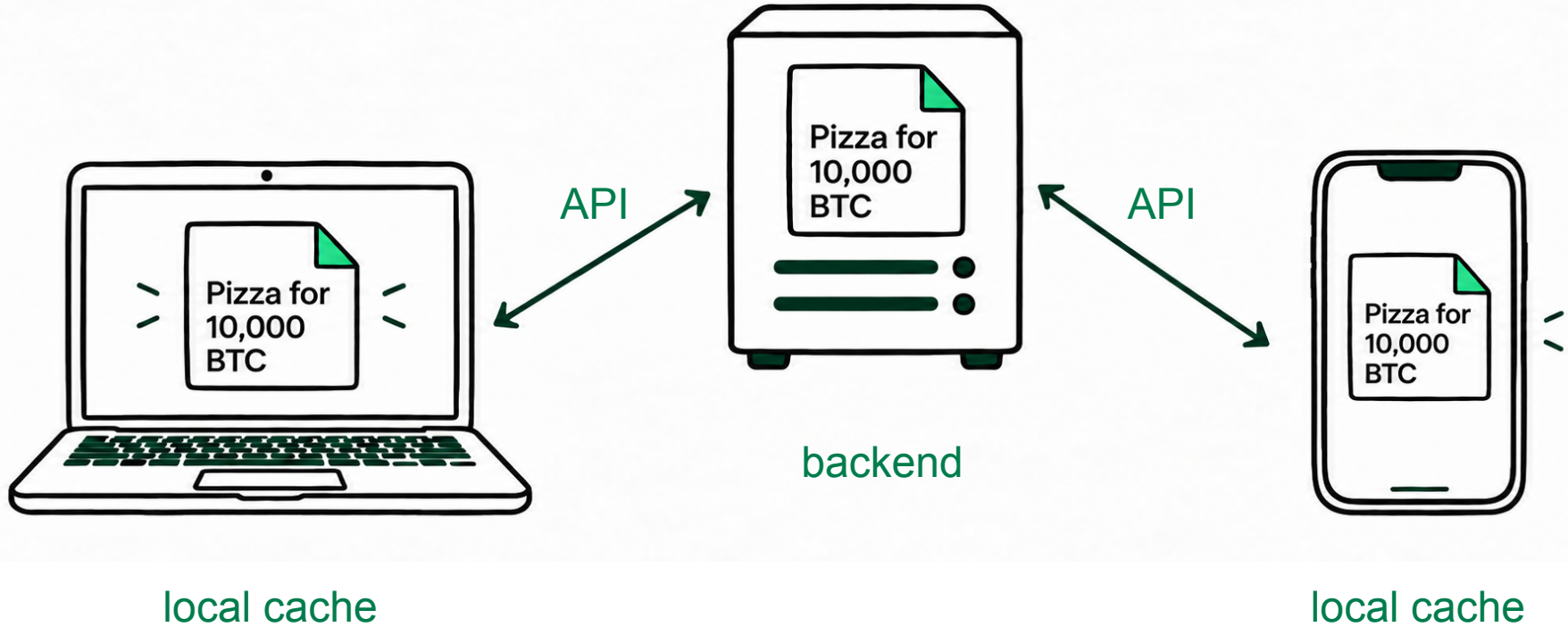
TAKE CONTROL



Fee	-2.2 BTC	-\$0.02
May 22, 2010	-10,000.99 BTC	-\$40.77
↑ Sent BTC • 20:16		
Papa John's — two pizzas 🍕 ✓ ✕	-10,000 BTC	-\$40.76
Fee	-0.99 BTC	-\$0.01
April 16, 2010	+500 BTC	+\$2.30
↓ Received BTC • 23:11		
👤 vexl	+500 BTC	+\$2.30



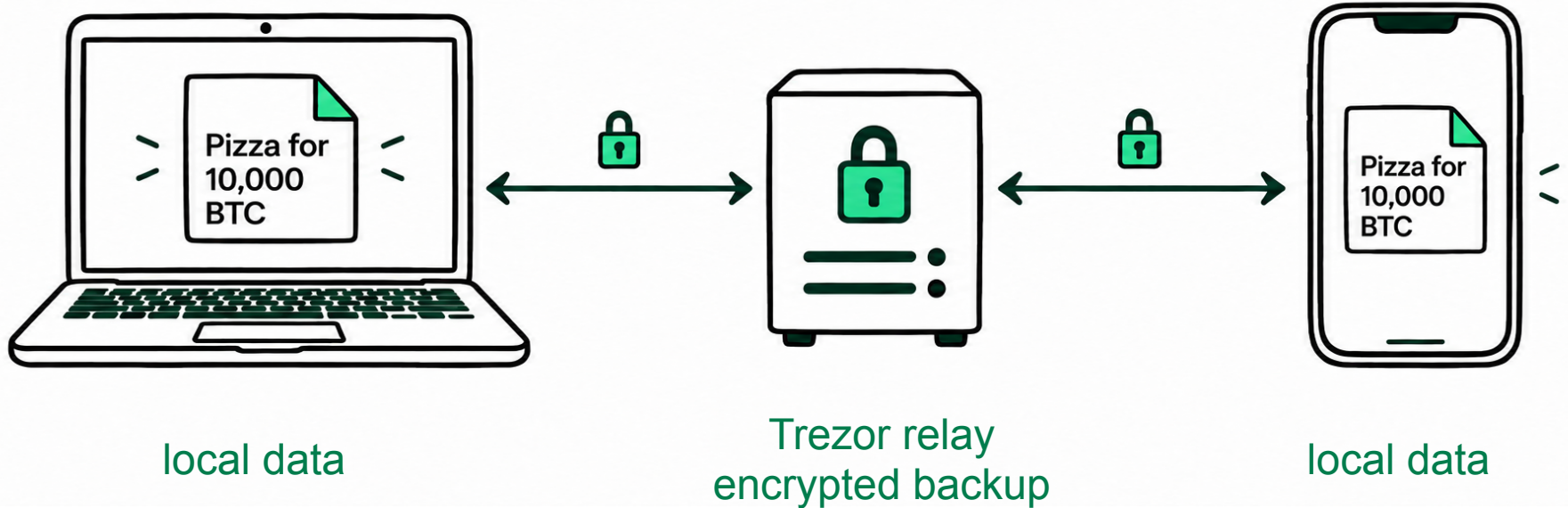
Cloud architecture



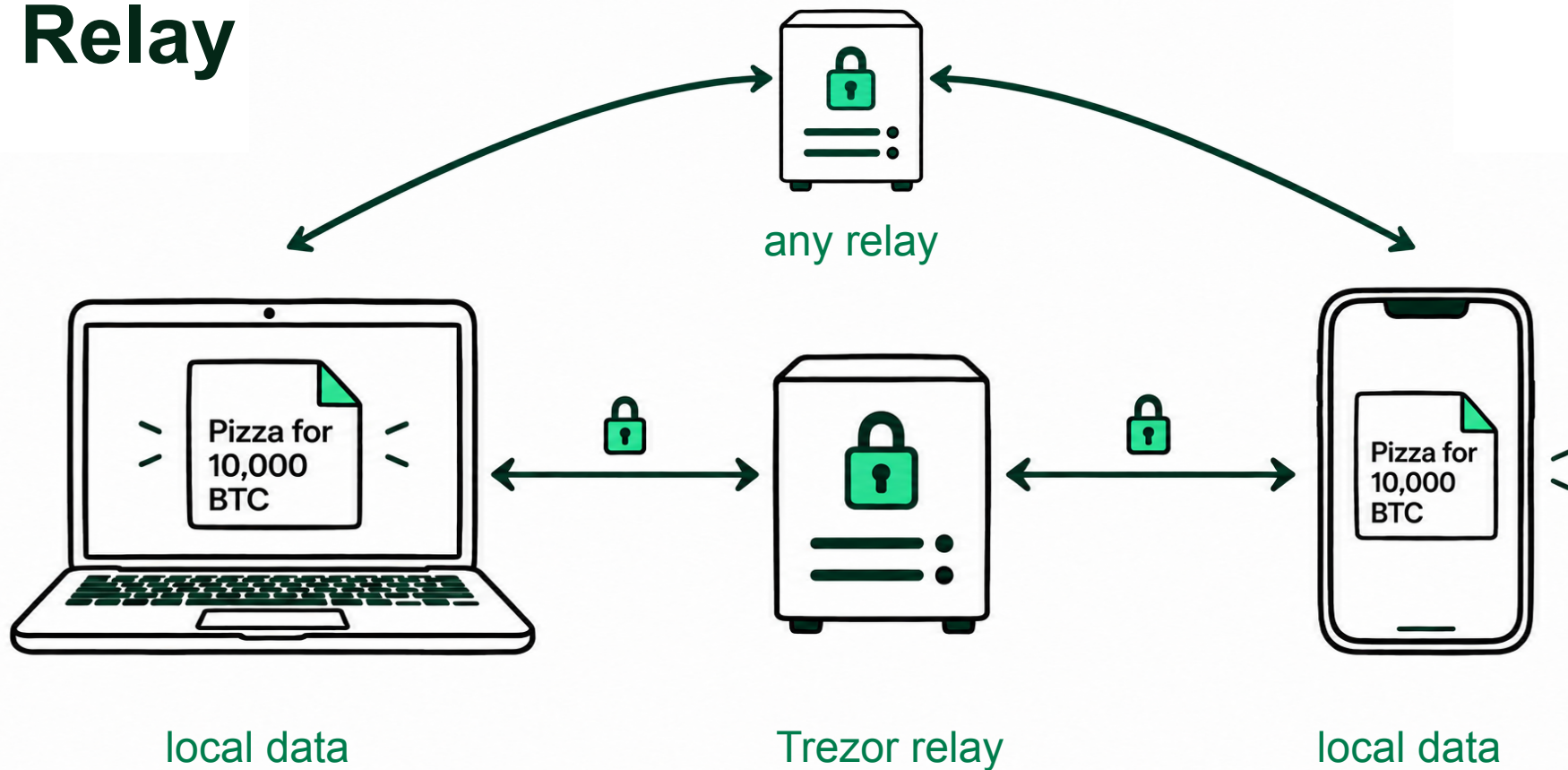
**YOUR DATA IS
NONE OF OUR
BUSINESS**



Local-first architecture

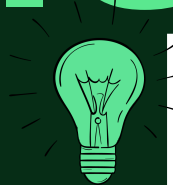


Relay



SYNCING
IS
HARD



SYNCING
~~IS~~ WAS
 HARD



Local-first

You own your data, in spite of the cloud

Ink & Switch, 2019

7 IDEALS FOR Local-First SOFTWARE

1 – No spinners



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and privacy
by default**

**7 – You retain
ultimate ownership
and control**

Local-first ecosystem



Automerge

Evolution



www.evolu.dev

Daniel Steigerwald @steida

Focus on quality, maintainability, scaling

Evolu

SQLite. CRDTs. Encrypted sync.





CRDTs

Conflict-free Replicated Data Types

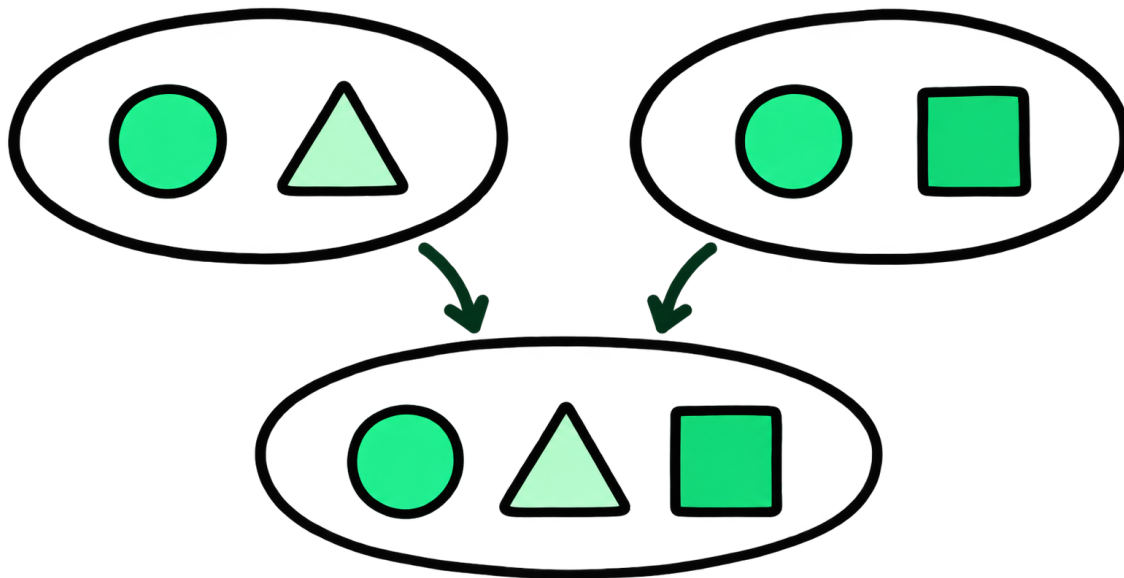
Mark Shapiro with colleagues, 2011



G-Set

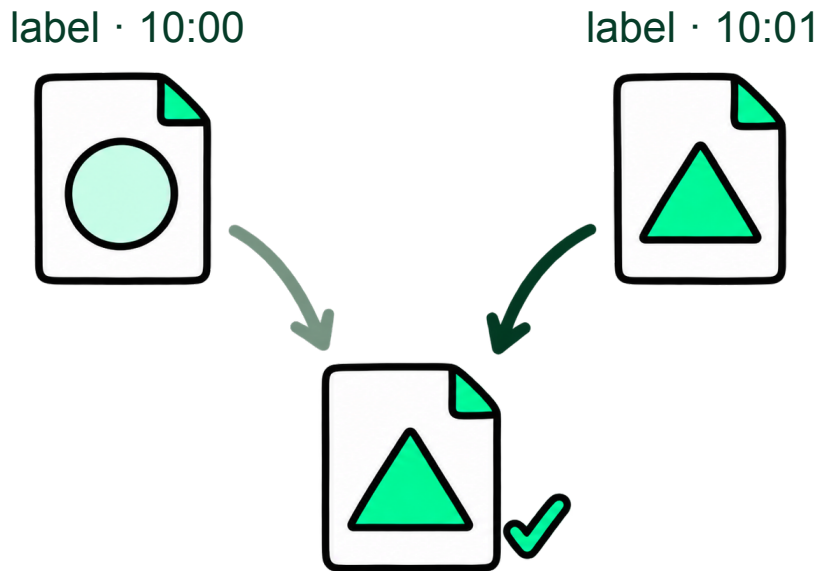
Grow-only Set

- Add
- Read
- Merge



LWW-Map

Last-Write-Wins Map



Highest timestamp wins per key.

HLC

Hybrid Logical Clock



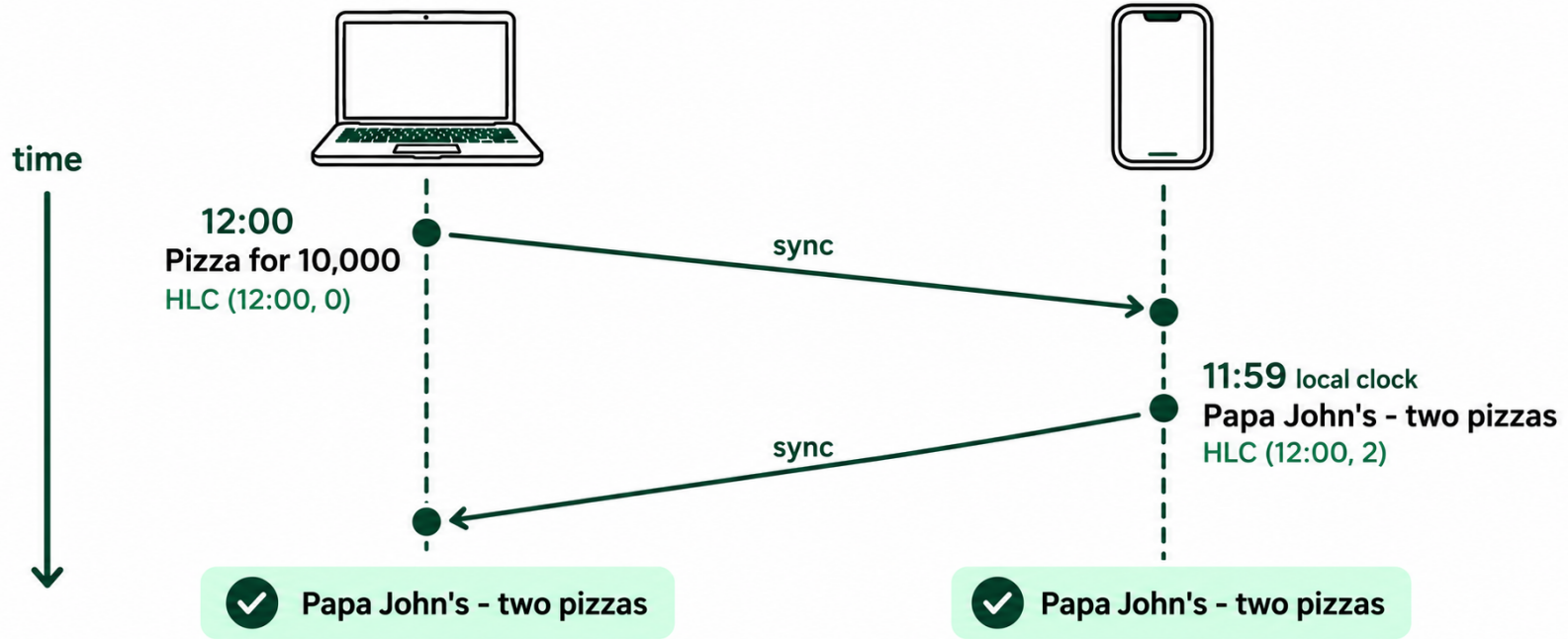
Physical time



Logical counter

$(10:00, 0) \rightarrow (10:00, 1) \rightarrow (10:01, 0)$

Eventual consistency



same set of operations → same state
maybe in a different order!

Local change history

ownerId	table	id	column	timestamp	value
CD9BE586...	output	edacbf...3f7-0	label	2010-05-22T12:00:00.000Z 0bf5807cf26bdf138	Pizza for 10,000
CD9BE586...	output	edacbf...3f7-0	label	2010-05-22T12:00:00.000Z 0dcbd3ad32eca3c	Papa John's - two pizzas

Sent BTC • 20:14

 Papa John's - two pizzas

-10,000 BTC

Evolu Relay DB

ownerId	timestamp	change
CD9BE586...C8F	2010-05-22T12:00:00.000Z 0bf5807cf26bdf138	1C08C8A05557F3AA55DAED4D48437B4A130D435E4B46FB1BC00102BBB848 E3DC3AC58D6FF5E7D3C2CF17E00973EAC09FAB32E766EA2824EABD1C32C3 5888D3E51FD3FD02EBC0DFD3E0A2559E12A5D7BFCF037087C7264ADCC7E4 DB3F3014EFEBD37868311D6762ABE20441D301E560CFF22E7677D07CF425C4 62...
CD9BE586...C8F	2010-05-22T12:00:00.000Z 0dcbd3ad32eca3c	B8A476E4840C7C127A670F40DC844C10B2D3FD4CCF55512BD00189C0FB25A 75FB28A94A410565F8CA003E4B08129CA2E3E20C8C8E0FBD37EDCCB40D4B 7E1752A24D11C9ACAB50E576338A0533EE9E5362780B90C77C7A5F0F8986D9 20B5A802E0B1D4E11AF32E118C614FE4706253B828A1A26D79D1C5972D73C6 2F...
CD9BE586...C8F	2010-05-22T16:44:29.572Z 0dcbd3ad32eaca3cc	9626281E5E6424E992419E23A347DEA0CCD4681835AC81C7D0012CA1504CE4 06B207F51B000AB43091A748203E4F5E5DE078EE28291CC0DB0D3E67394495 E9BE4995419951D2F88C3F6350156BF4B15958256D9D2296EE1ABE30EAE415 71215486E544837B3ACEF13D5A3DB2086DEADA0E1CB7F4A7877B7BA89C93 32...
EF80BCD5...CEF	2010-05-22T16:39:25.059Z 0ff4596ad00ca338a	08020E1DD8F9F3DE33843B4ABB6519A6050A1E86F19B70329002A07DD819F0 BCC33D58CED48478353A6DC73449B8FA2107CAF66296530227966746CDEED ABD11BC1447D0DDF492A33B731C6FC91712BCFEACBAC90853308FC766109 1FD7EAB7DD72683F176977254E3336847B9510277B61A69148CF0969DFAC5A D2...

Delete label

May 22, 2010	-10,000.99 BTC	-\$40.77
↑ Sent BTC • 20:14 Remove label 🔖 Papa John's - two pizzas ✎ 🗑 Fee -10,000 BTC -0.99 BTC -\$40.76 -\$0.01		

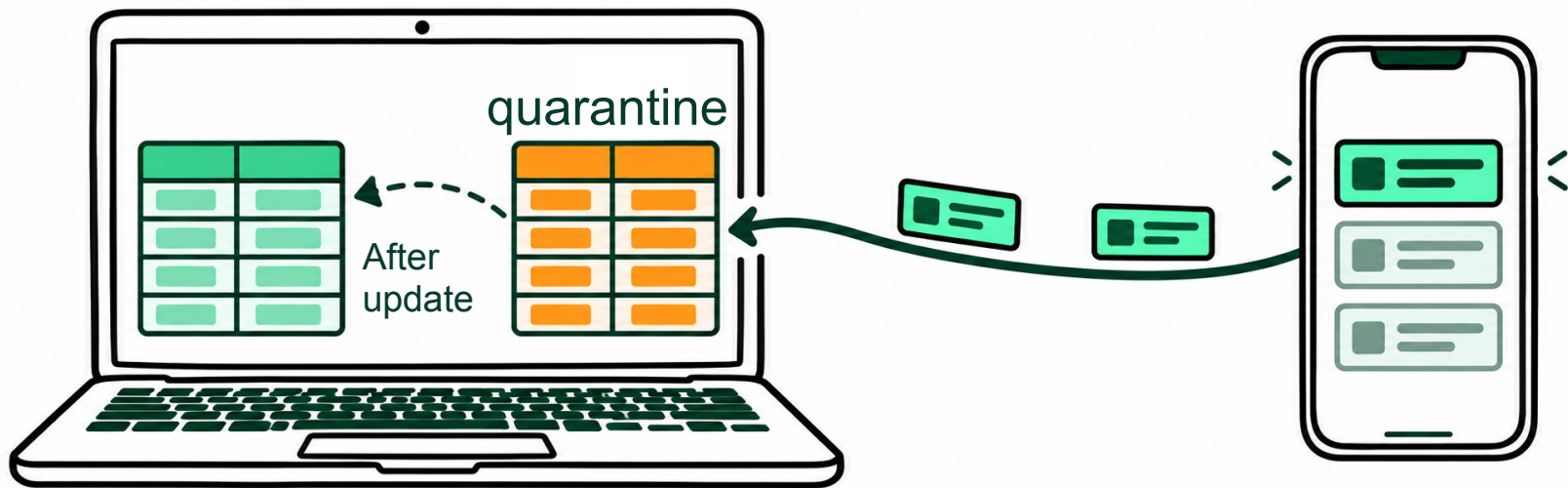
Local evolu DB - deletion

ownerId	table	id	column	timestamp	value
CD9BE586...	output	edacbf...3f7-0	label	2010-05-22T12:00:00.000Z 0bf5807cf26bdf138	Pizza for 10,000
CD9BE586...	output	edacbf...3f7-0	label	2010-05-22T12:00:00.000Z 0dcbd3ad32eca3c	Papa John's - two pizzas
CD9BE586...	output	edacbf...3f7-0	label	2026-10-22T12:00:00.000Z 0dcbd3ad32eca3c	

Old clients come back

Last year's app

Today's app



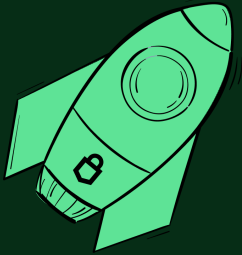
Waiting for an app update

Your servers are gone

Read.
Modify.
Export.



TOOLS
ARE



READY

**INCENTIVES
ARE
CHANGING**



Build apps you'd want to use

Slides & Links & Feedback

<https://devfest2026.matejkriz.cz>

