I'm Not Cleaning Up Their Mess!

Let's Discuss Legacy Systems

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VIRTUSLAB

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Head of Java / Kotlin Development

VIRTUSLAB

JVM Weekly

Home Notes Archive About

Best of Foojay.io September 2024 Edition – JVM Weekly vol. 102

We started new month, so it is time for new Foojay.io edition!

OCT 3 · ARTUR SKOWRONSKI

Latest Top Discussions

Kotlin Roadmap update and JDK 23 Release Followups - JVM Weekly vol. 101

This week - we have Kotlin!

SEP 26 · ARTUR SKOWRONSKI

Java 23 and GraalVM for JDK 23 Released - JVM Weekly vol. 100

Today, we have a double occasion! But first, the duties (after all, we have the new JDK 23), and then the pleasures (my littl...

SEP 19 · ARTUR SKOWRONSKI

JVM Weekly

From the latest updates in JVM languages like Java, Kotlin, and Scala to emerging technologies like GraalVM and Quarkus, this newsletter covers a wide range of topics that are of interest to developers and tech enthusiasts.

Recommendations

MANAGE

Architecture Weekly
Oskar Dudycz

Fractional Architect

DUMBO MOVING & STORAGE
1

New York City’s Transit System Approves $20 Billion Budget

By Michelle Kaske

Published: December 18, 2024 at 12:45PM EST

The first subway line in 1904

By 1920 it had grown to hundreds of miles

Since 1940, not a single one new

Number of Stakeholders involved

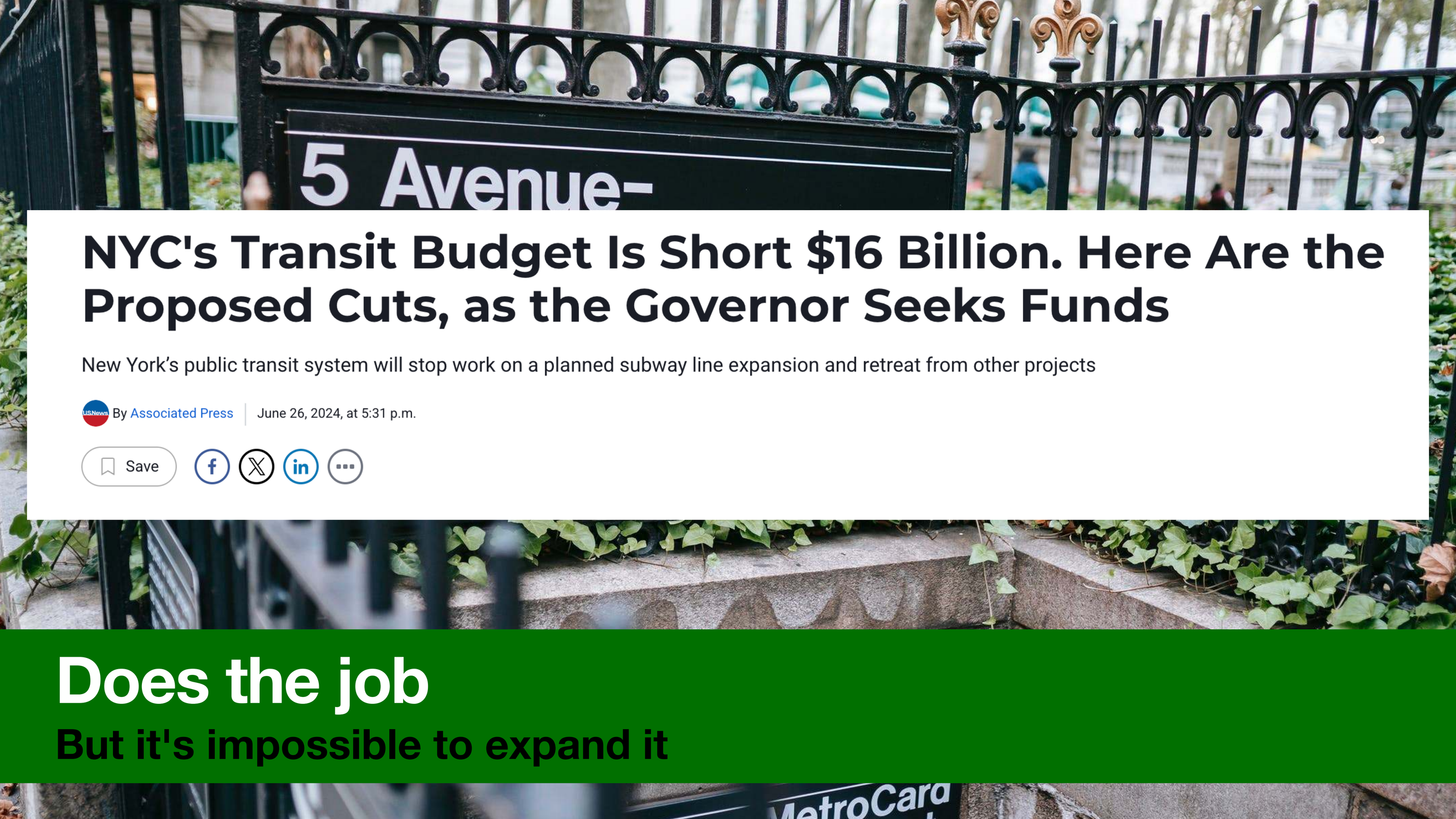
Blocks every initiative

The cost of maintenance is cosmic

The entire budget goes to ongoing repairs

It is crucial for the operation of the city

You can't just stop it - it has to work



NYC's Transit Budget Is Short $16 Billion. Here Are the Proposed Cuts, as the Governor Seeks Funds

New York's public transit system will stop work on a planned subway line expansion and retreat from other projects

By Associated Press | June 26, 2024, at 5:31 p.m.

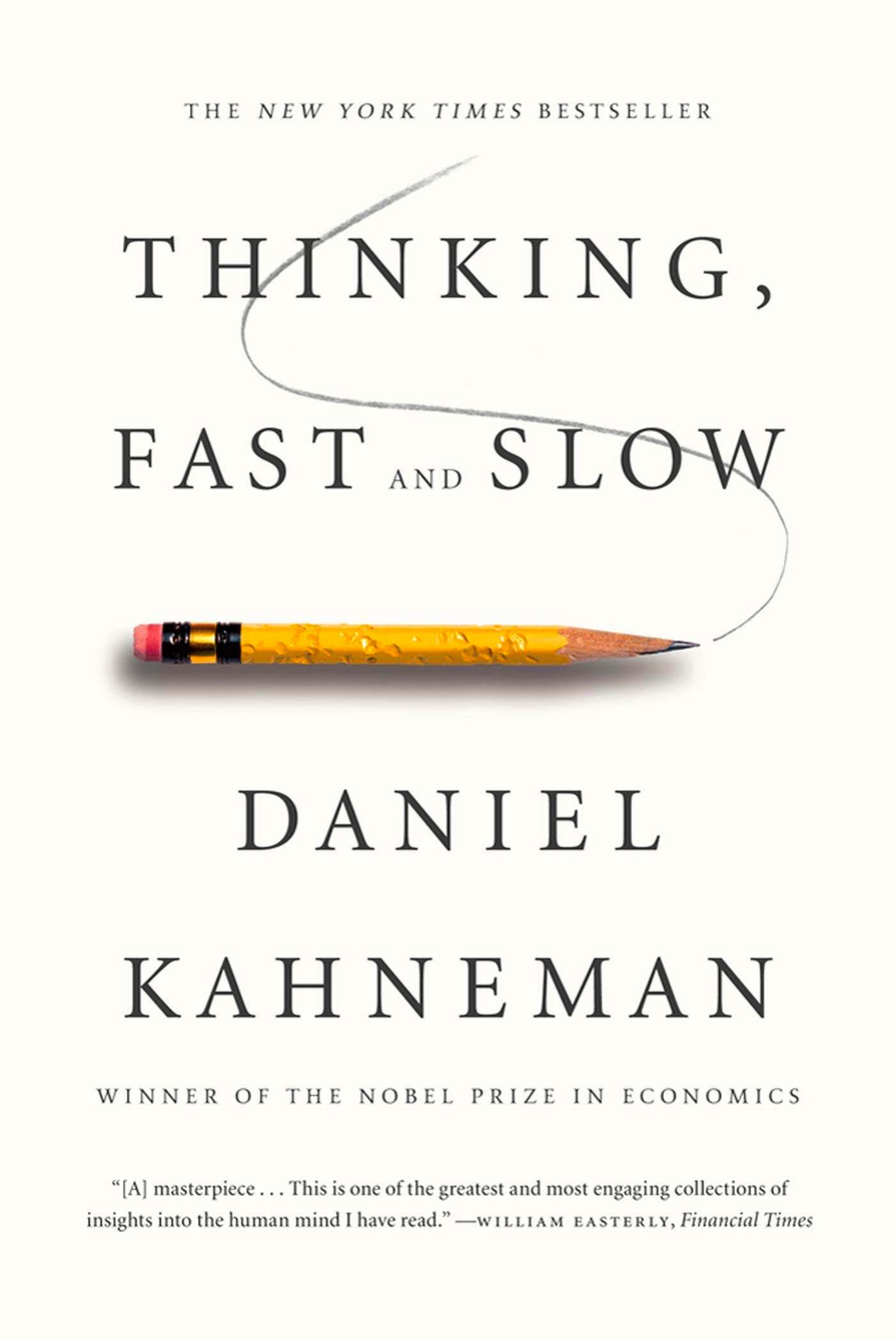
Save

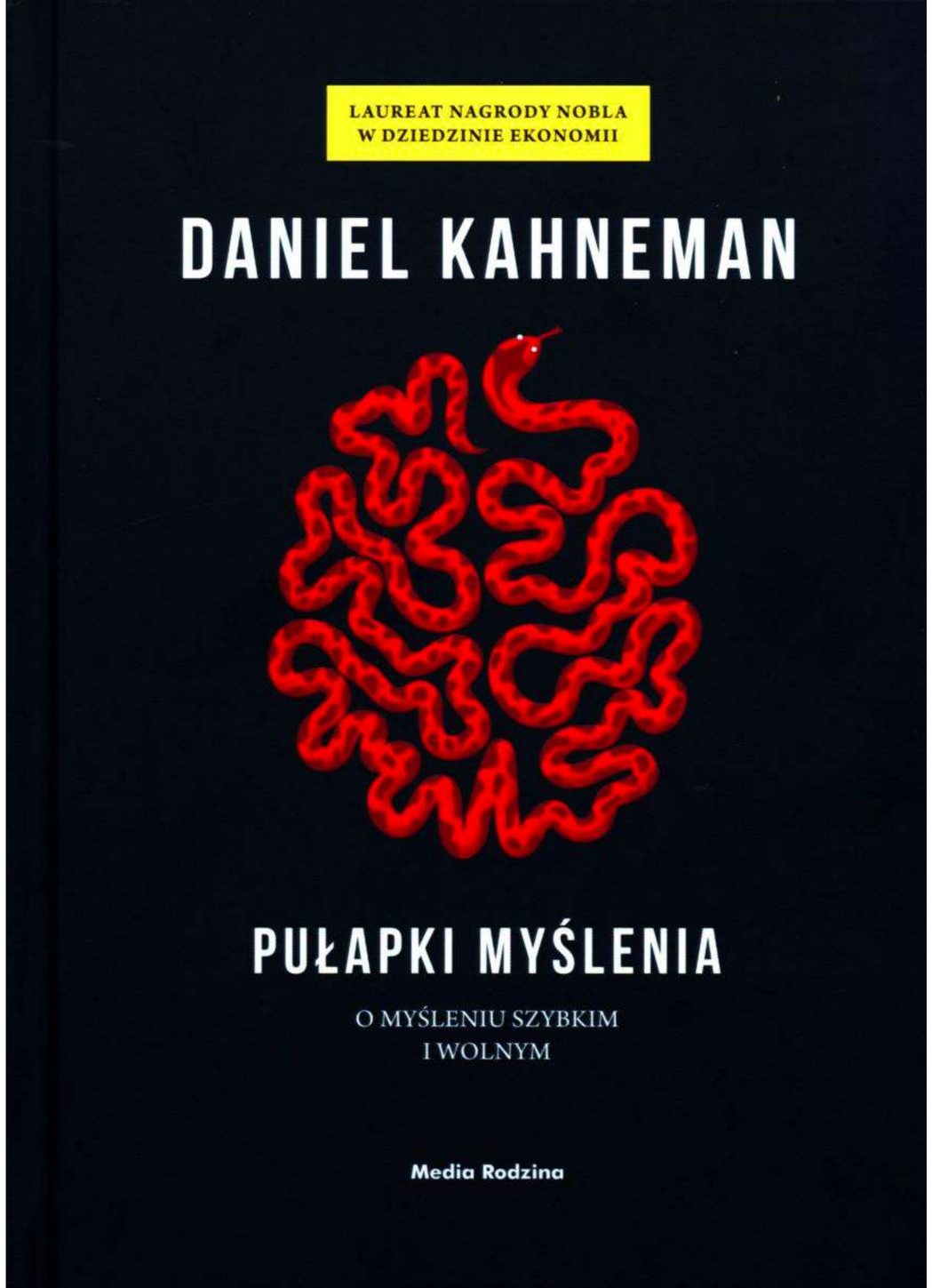
Does the job

But it's impossible to expand it

IS THAT A METAPHOR?

Salary Records
Process 3
Employee Salary
Employee's Work Details
Employee Contact Info
Employee's Travel Info
Employee's Education Details
Employees Login Information
Verify Login
Login Details
D1
Verified Employees
Process 7
Produce Employee Salary Report
Search/View Emp
Salary Info
HUMAN RESOURCE DEPARTMENT
ŁOOOO PANIE
TVP 1
A KTO PANU TUTAJ TAK SPIERDOLIŁ
PACZAIZM.PL

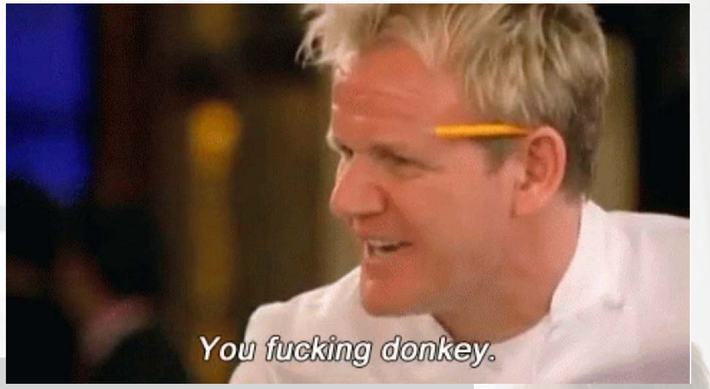

THE NEW YORK TIMES BESTSELLER
THINKING, FAST AND SLOW
DANIEL KAHNEMAN
WINNER OF THE NOBEL PRIZE IN ECONOMICS
"[A] masterpiece . . . This is one of the greatest and most engaging collections of insights into the human mind I have read." —WILLIAM EASTERLY, Financial Times


LAUREAT NAGRODY NOBLA W DZIEDZINIE EKONOMII
DANIEL KAHNEMAN
PUŁAPKI MYŚLENIA
O MYŚLENIU SZYBKIM I WOLNYM
Media Rodzina

Describes the common tendency to explain the behavior of observed individuals in terms of internal and fixed causes (e.g., character traits) while underestimating situational, external influences

Fundamental attribution error

Lee Ross



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Fundamental attribution error

Lee Ross

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Fundamental attribution error

Lee Ross

The authors and owners of new software products often look at aging software with disdain. They believe that, if the product had been designed using today's techniques, it wouldn't be causing problems. Such remarks remind me of a young jogger scoffing at an 86 year old man (who, unknown to the jogger, was a champion swimmer into his 50's) and saying that he should have had more exercise in his youth.

0270-5257/94 $3.00 © 1994 IEEE

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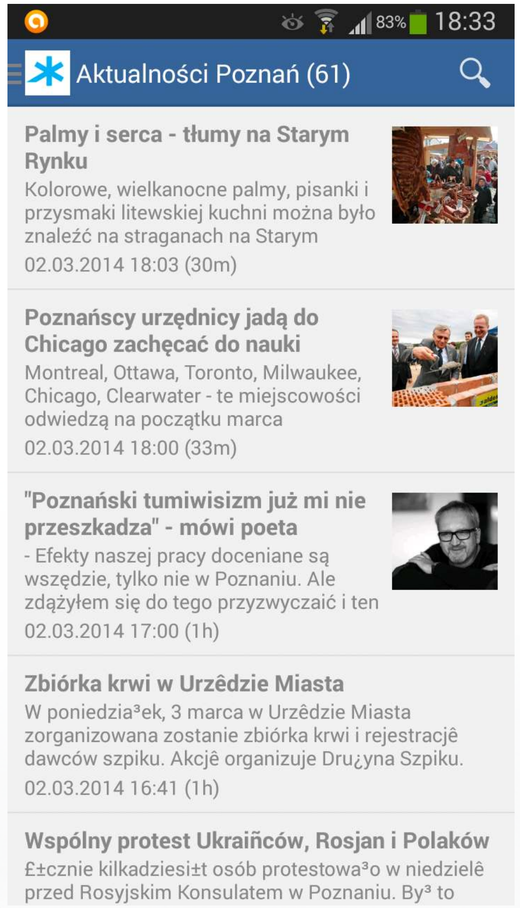
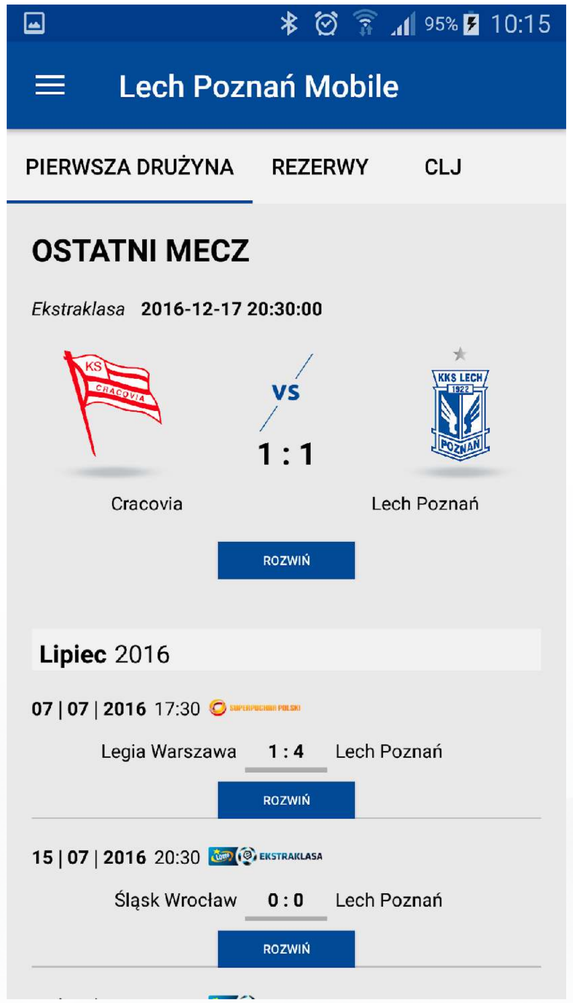
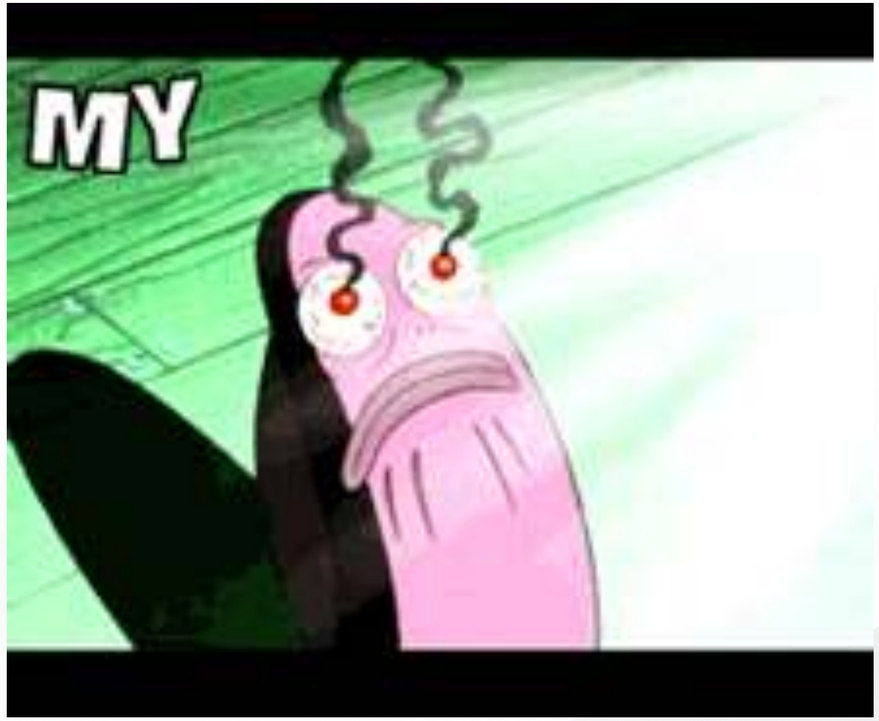
0270-5257/94 $3.00 © 1994 IEEE







Things are not changing

Things are changing

Feiges Früchtchen
Feige mit Vodka Likör
20ml e
Kobold

Now let’s get to the meat of it!

Enterprise Architects leading major integration project

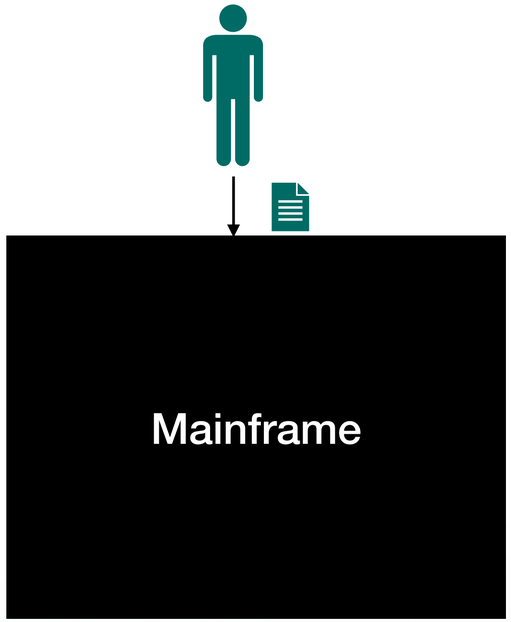
Pieter Bruegel the Elder (1568)

Helicopter View

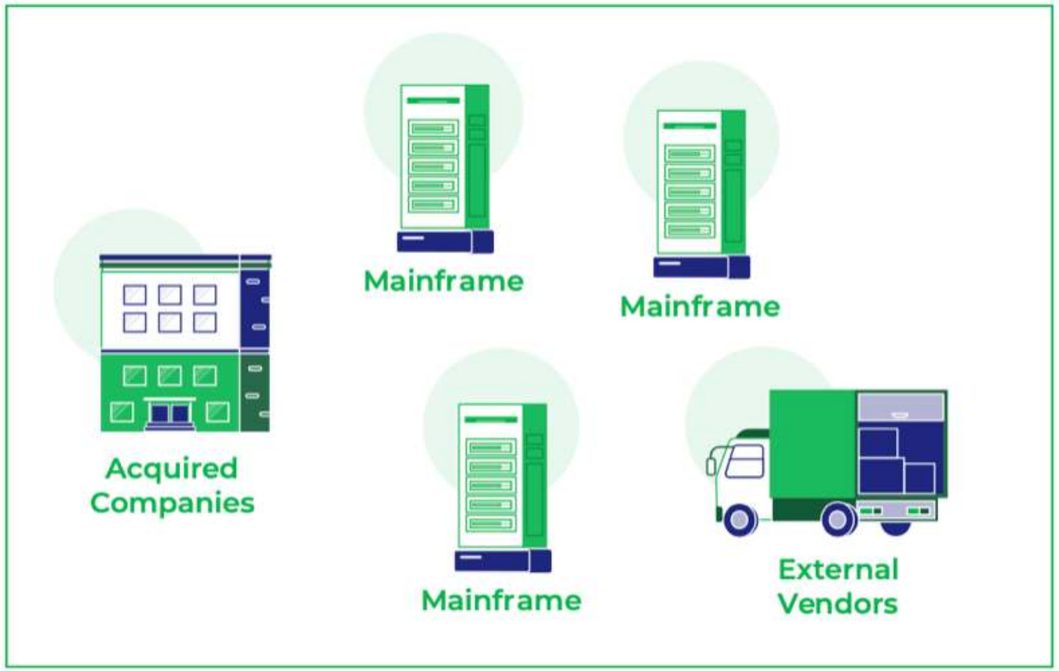
1980s
SONY
OREGON STATE
TRACK
INDEX
03
TIME
INTRO
01:01 05
ELAPSED
NORMAL
CANCEL
MEMORY
NEO-GEO CD
SNK
Panasonic

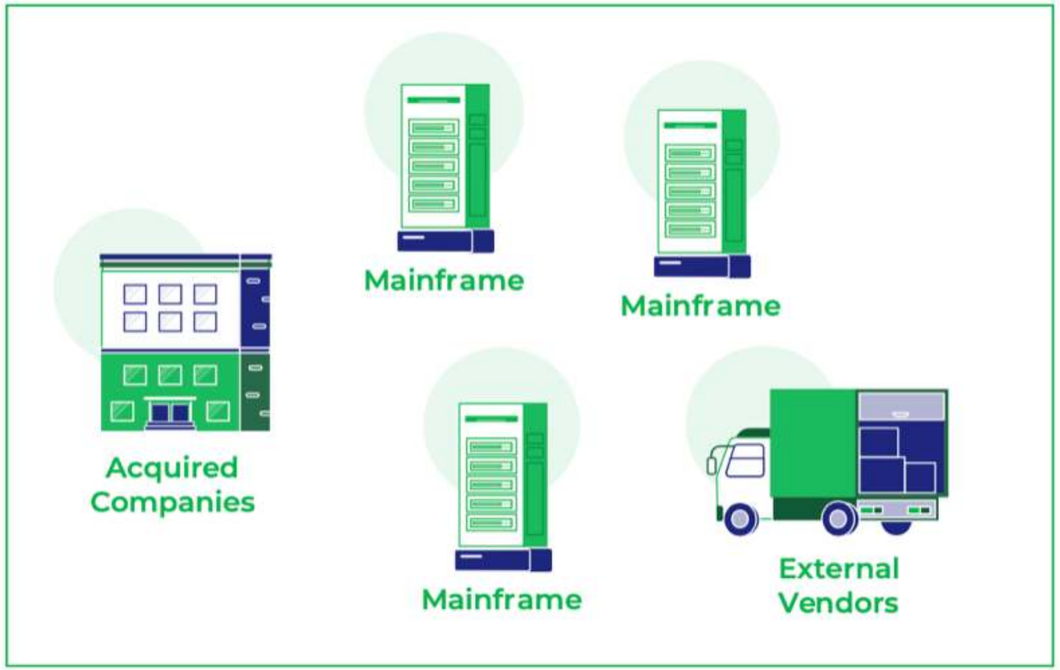
So our story will begin in the 1980s

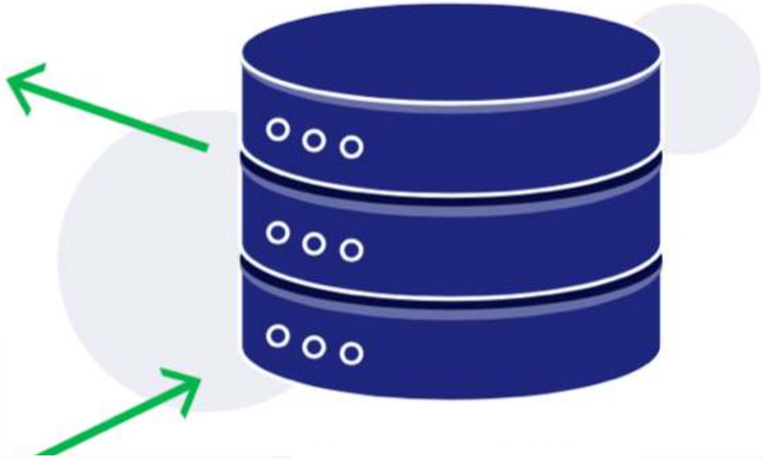
Mainframe


Mainframe

1990s


Mainframe
Mainframe
Acquired Companies
Mainframe
External Vendors





ORACLE
DATABASE

NoSQL at Home

field1	value1	field2	value2	fie

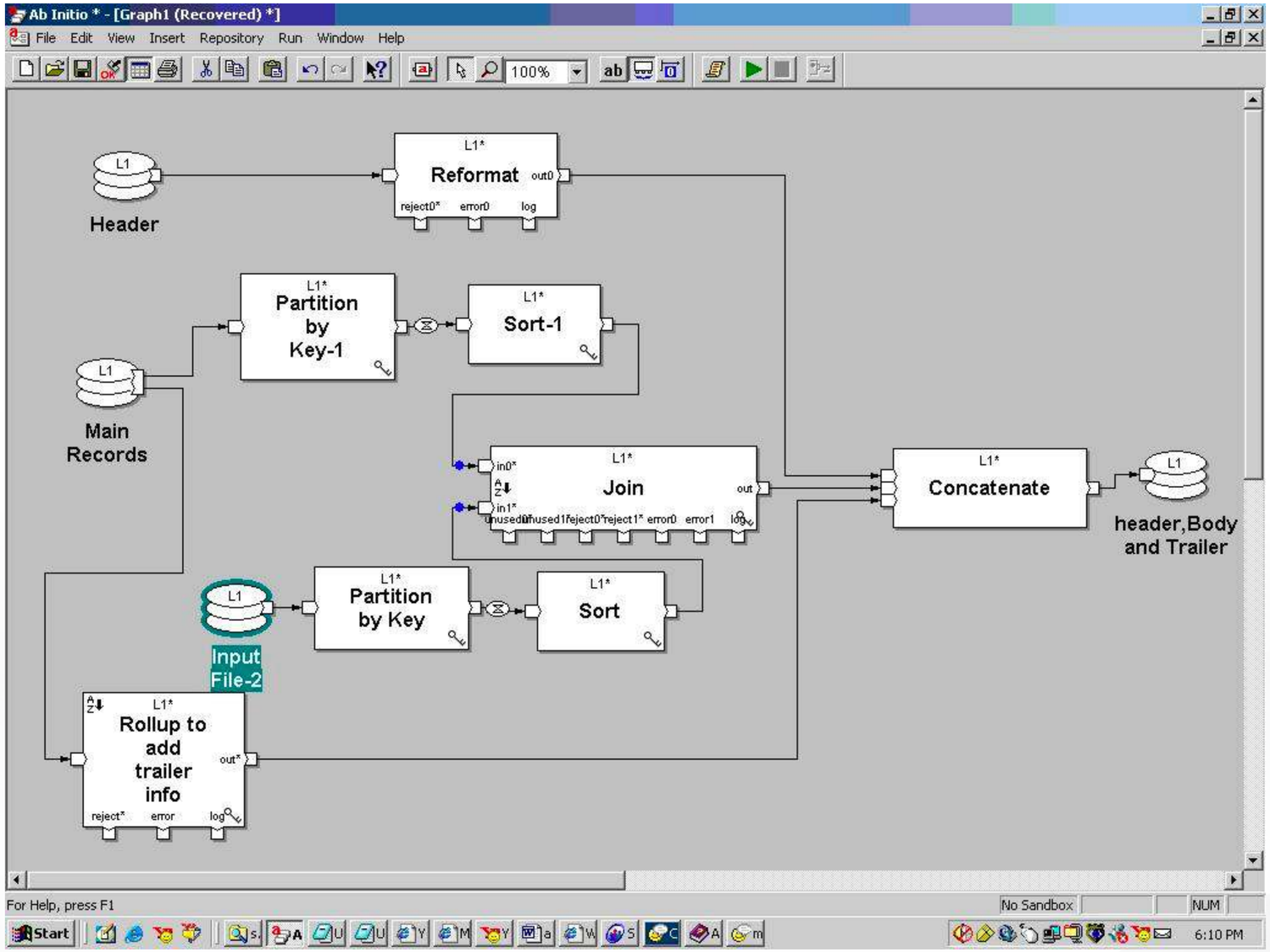
Database

Mainframe

Database

Mainframe

ETL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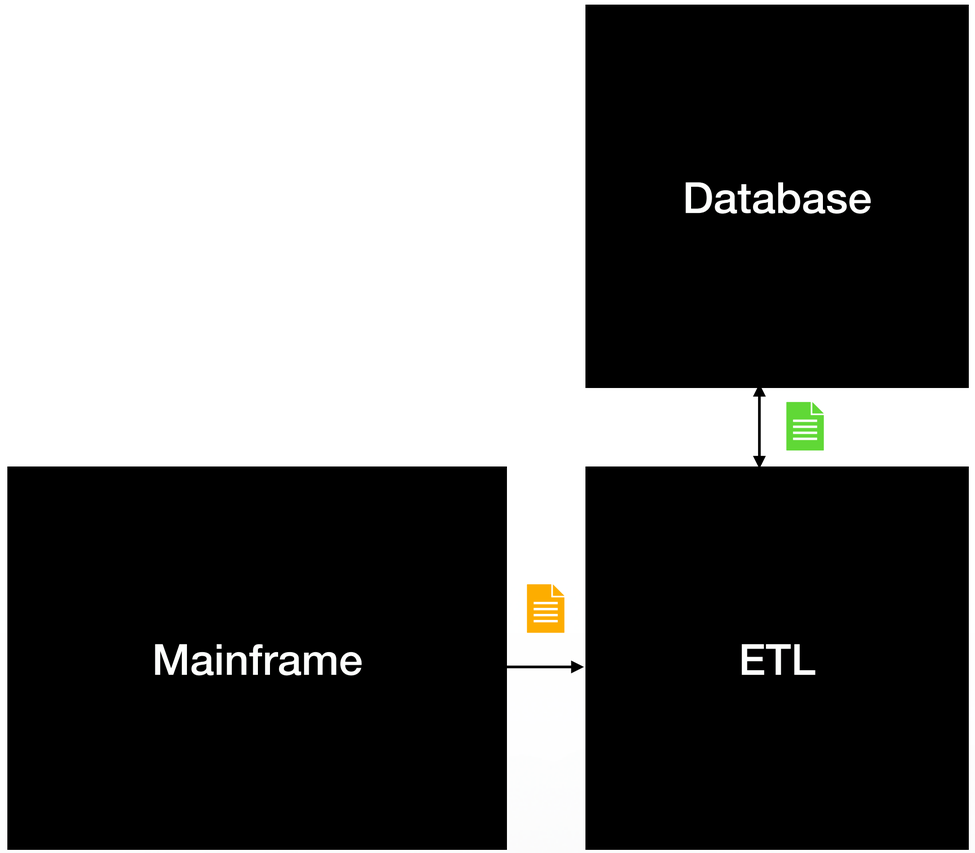
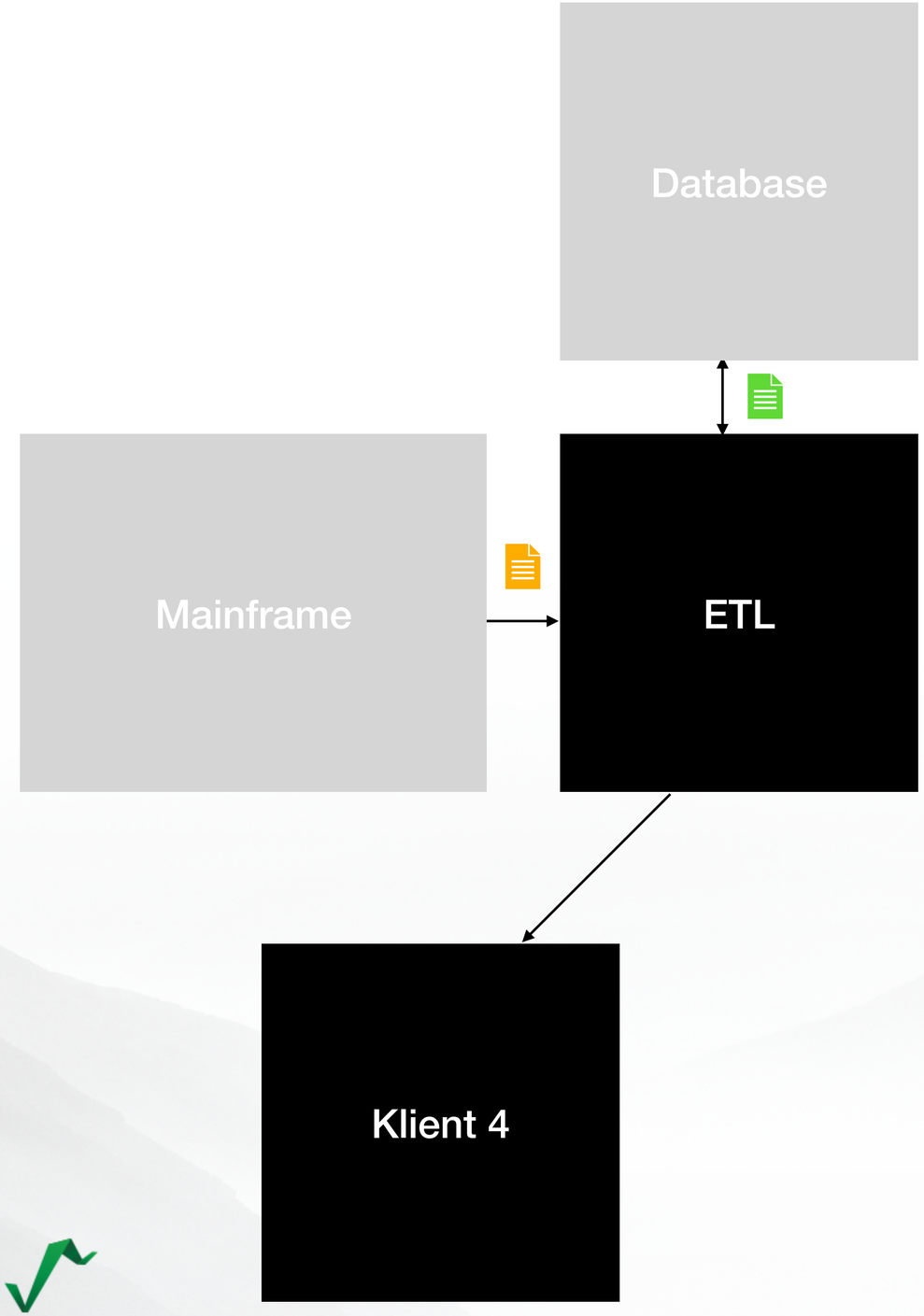
File Edit View Insert Repository Run Window Help
100%
Header
Reformat
Main Records
Partition by Key-1
Sort-1
Join
Concatenate
header,Body and Trailer
Input File-2
Partition by Key
Sort
Rollup to add trailer info
For Help, press F1
No Sandbox
NUM
6:10 PM

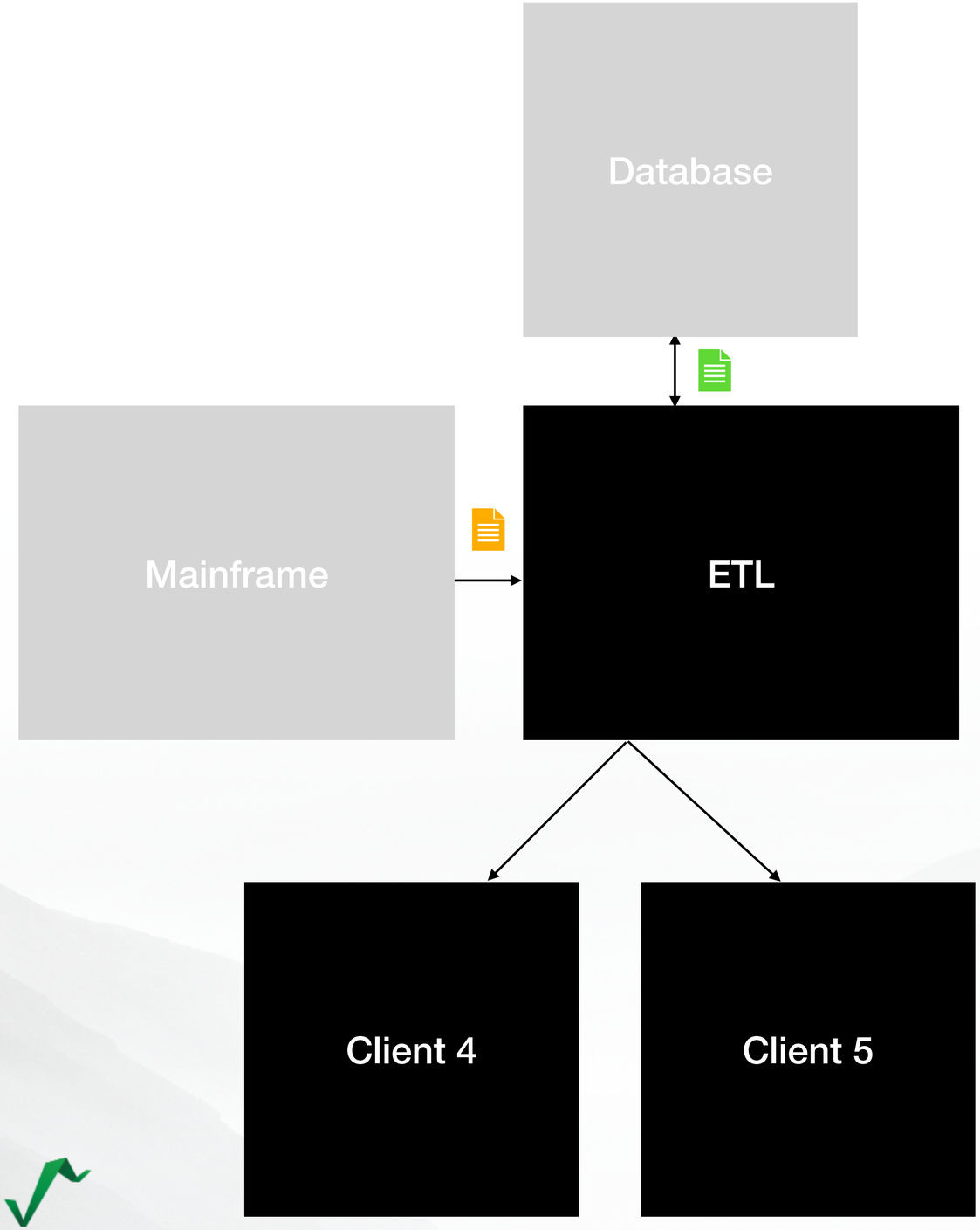
Database

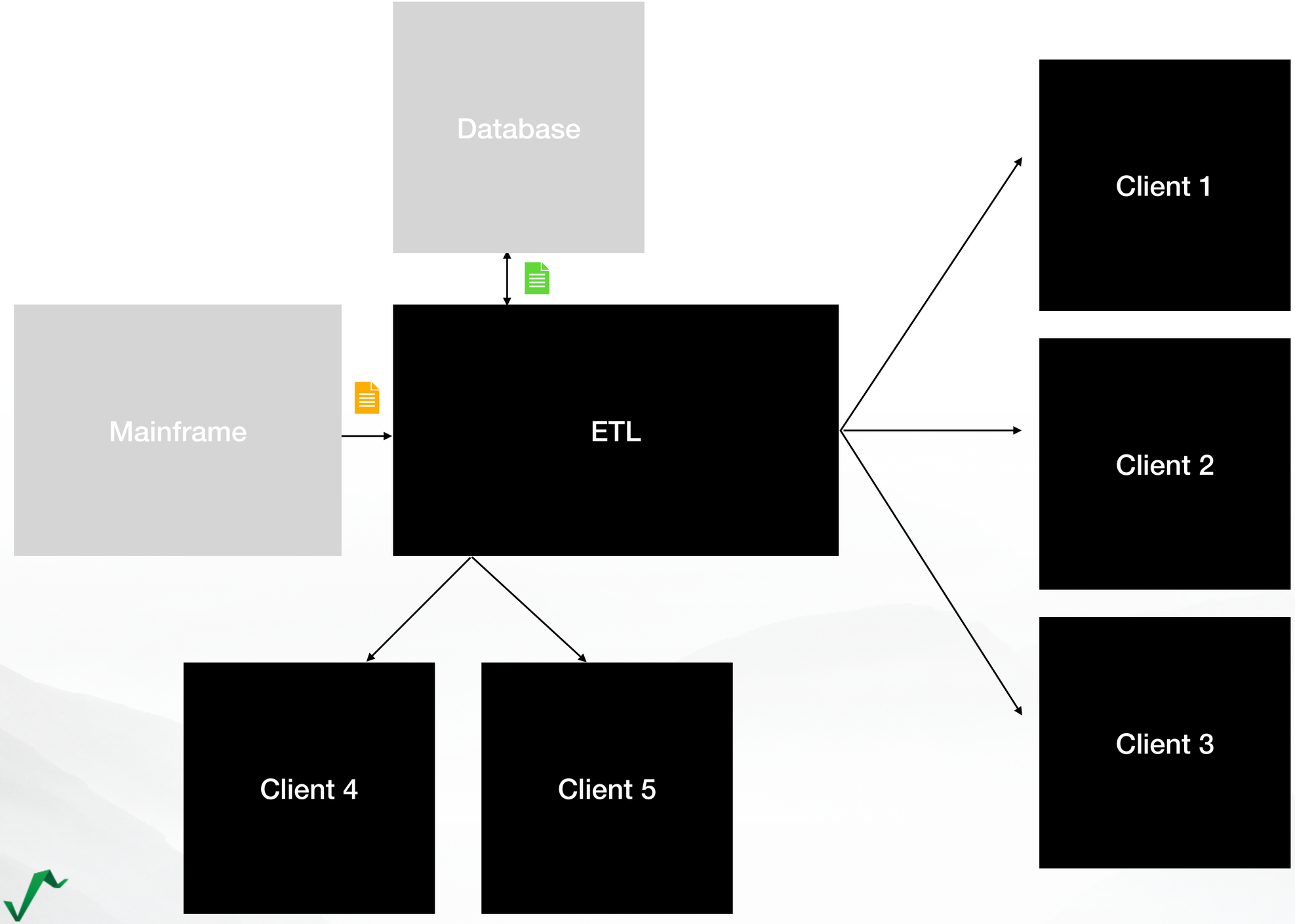
Mainframe

ETL


Database
Mainframe
ETL

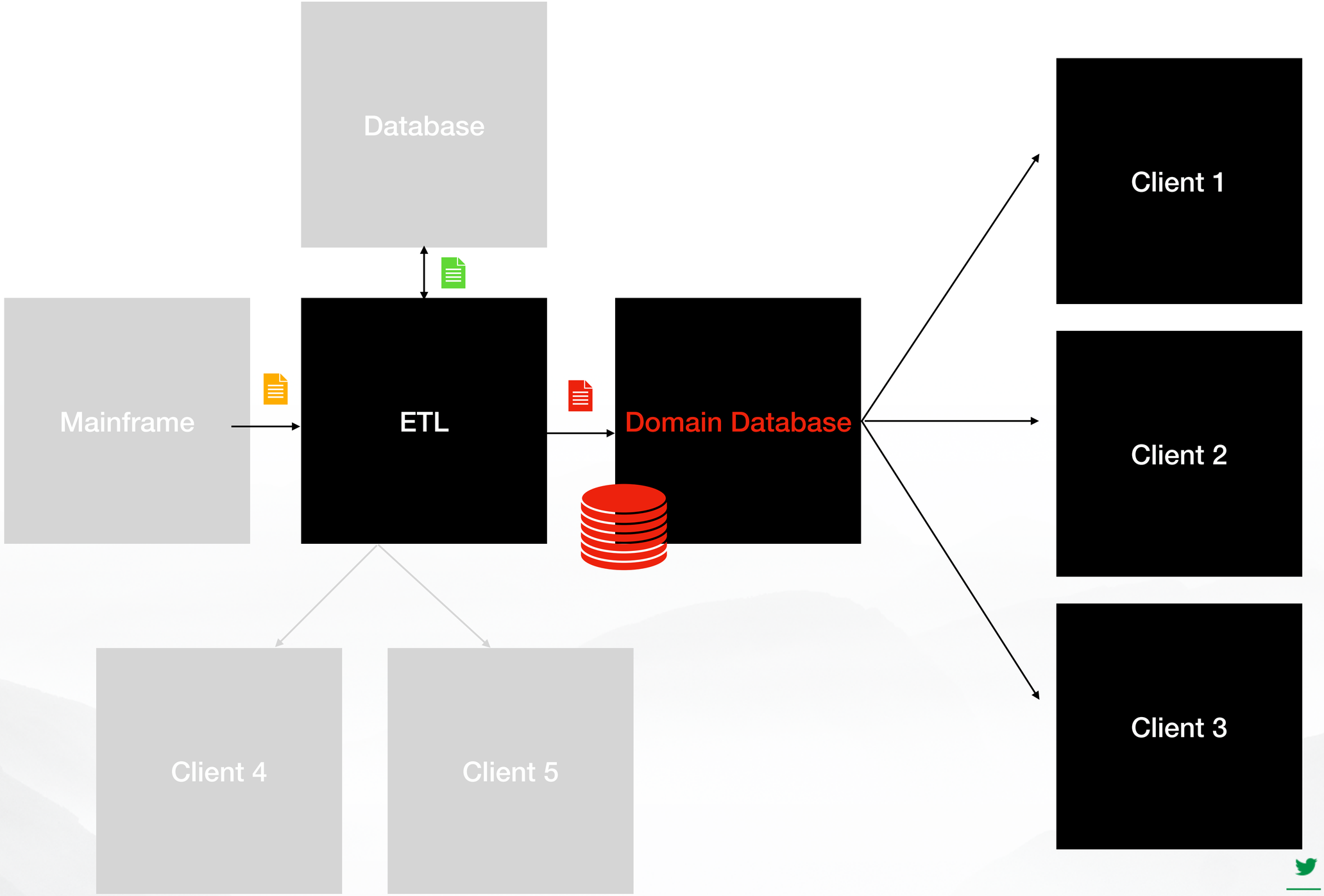

Database
Mainframe
ETL
Klient 4

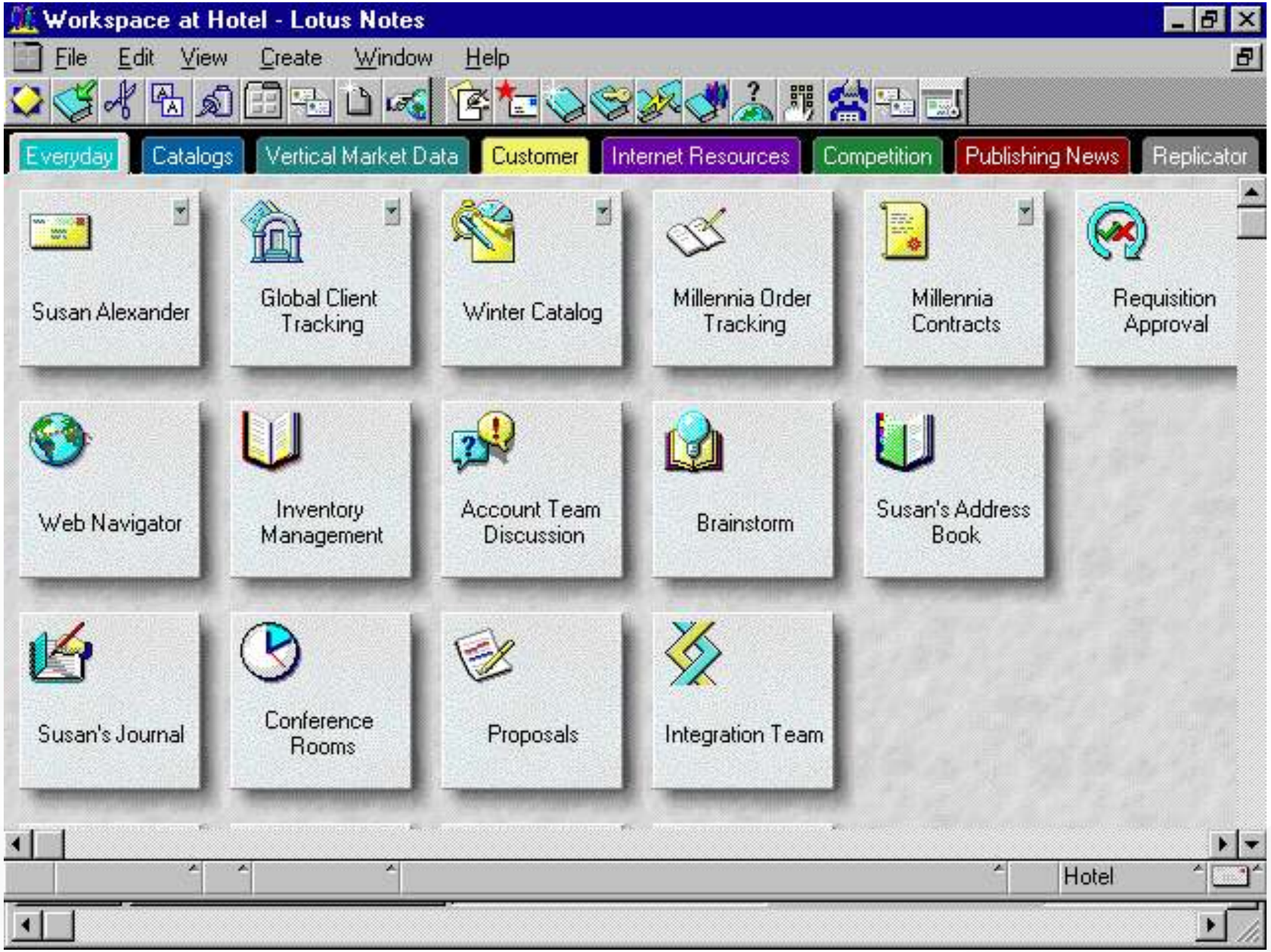

Database
Mainframe
ETL
Client 4
Client 5

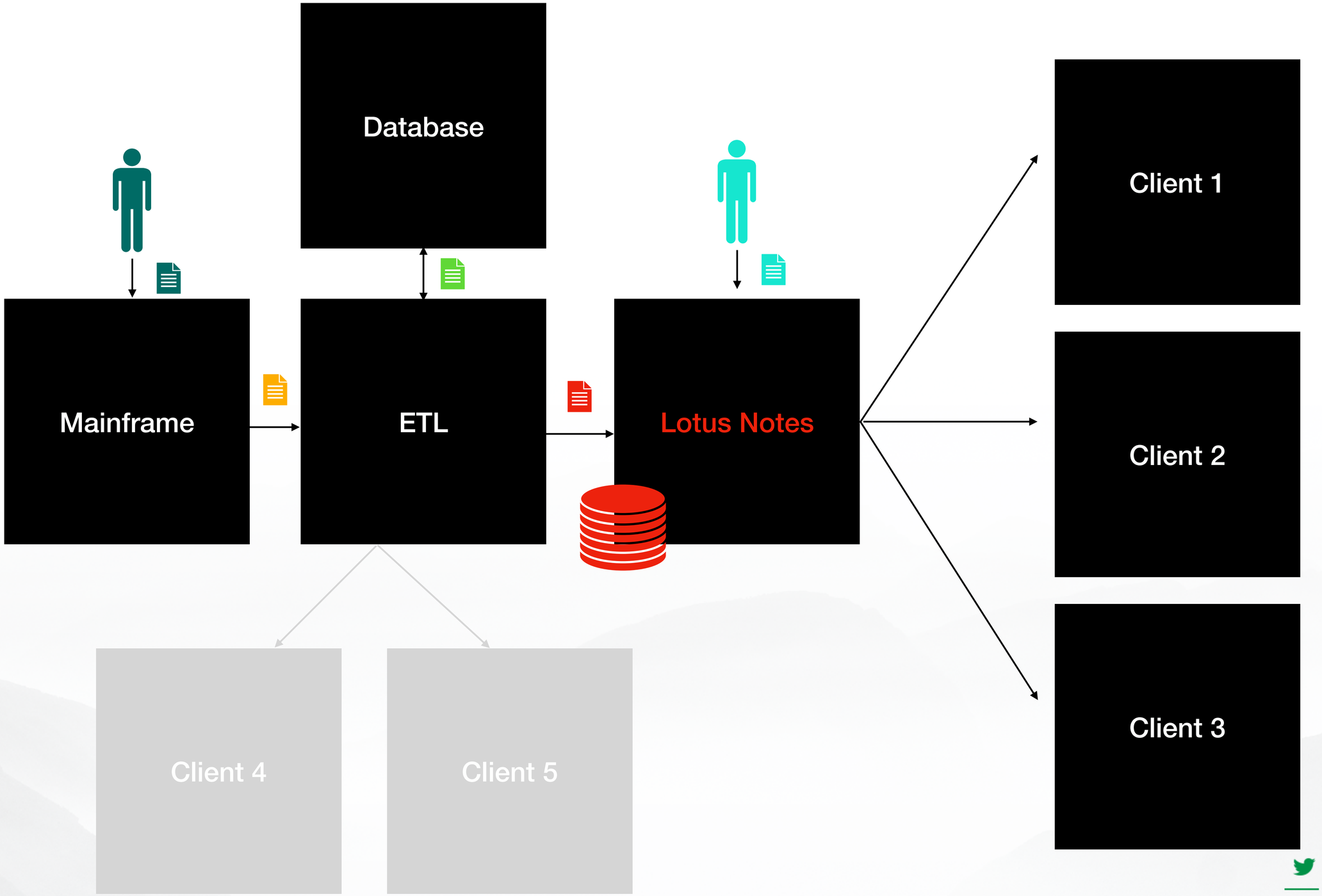

Database
Mainframe
ETL
Client 1
Client 2
Client 3
Client 4
Client 5

ETL

2000s


Database
Mainframe
ETL
Domain Database
Client 1
Client 2
Client 3
Client 4
Client 5


Workspace at Hotel - Lotus Notes
File
Edit
View
Create
Window
Help
Everyday
Catalogs
Vertical Market Data
Customer
Internet Resources
Competition
Publishing News
Replicator
Susan Alexander
Global Client Tracking
Winter Catalog
Millennia Order Tracking
Millennia Contracts
Requisition Approval
Web Navigator
Inventory Management
Account Team Discussion
Brainstorm
Susan's Address Book
Susan's Journal
Conference Rooms
Proposals
Integration Team
Hotel



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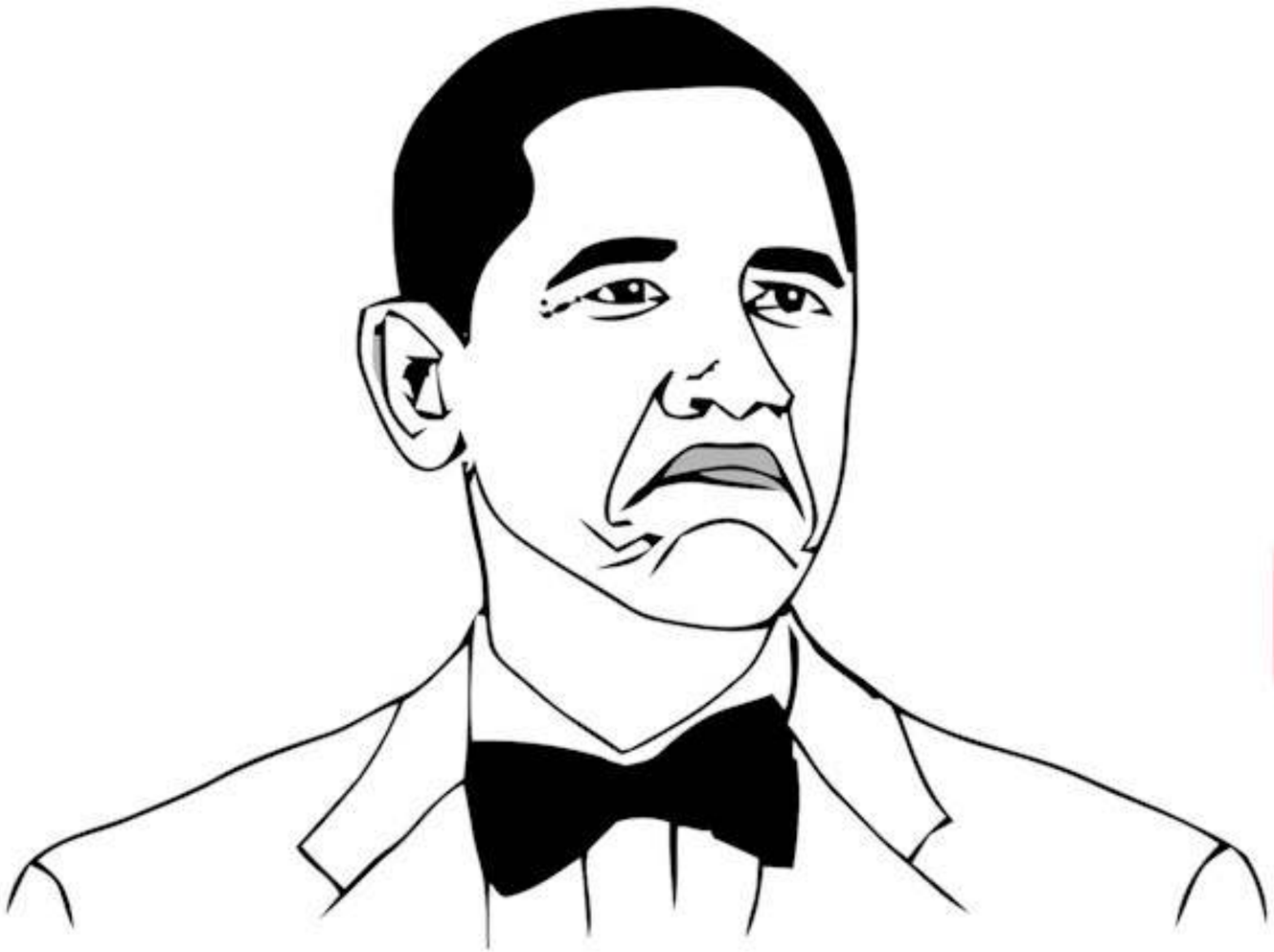
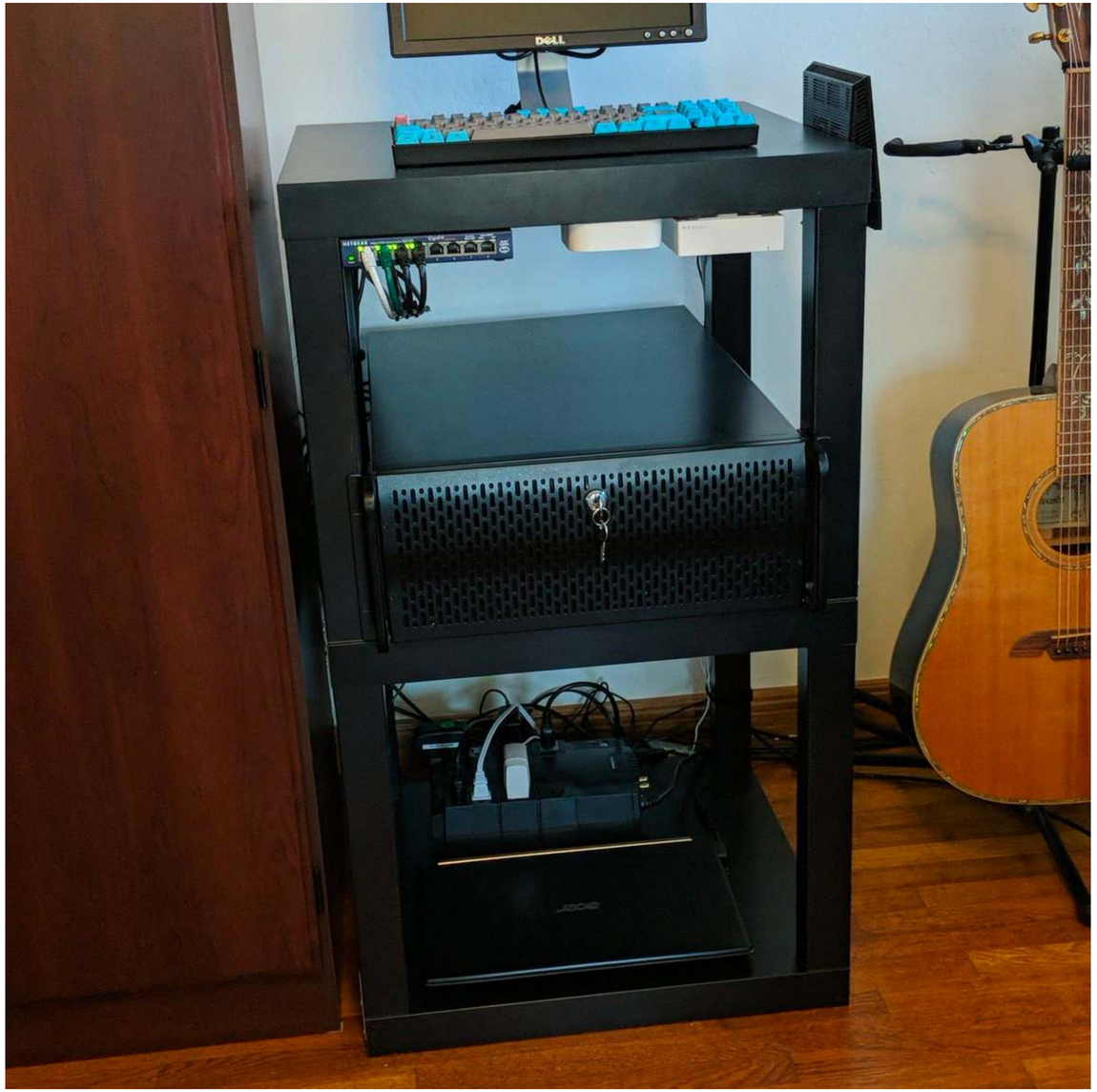


NOT BAD

- No replication
- Old software impossible to update
- Access to data only from Data Center

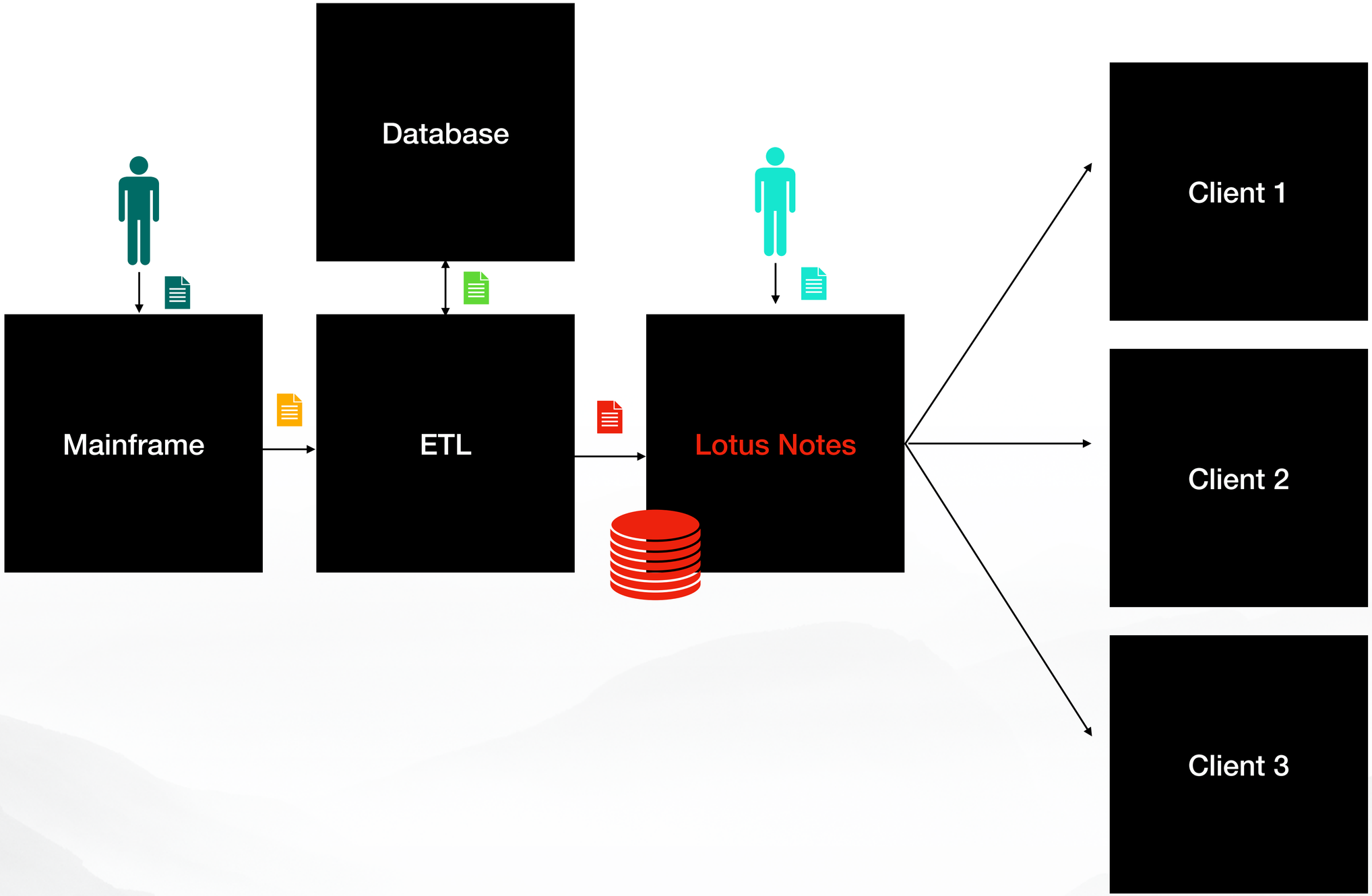


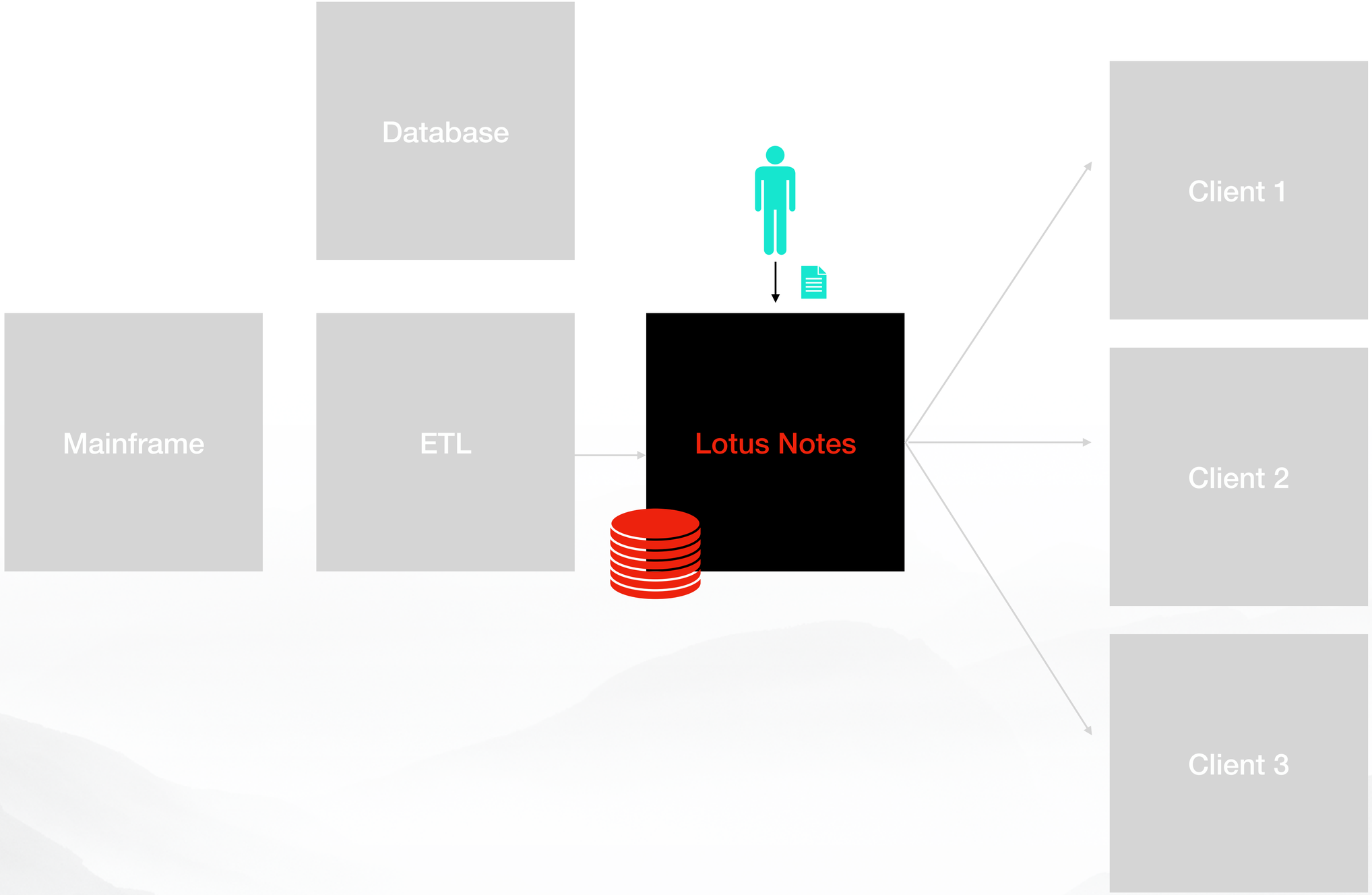
2010s

CLOUD COMPUTING?
COMPUTERS CAN FLY NOW?
imgflip.com

Move to the Cloud ☁️

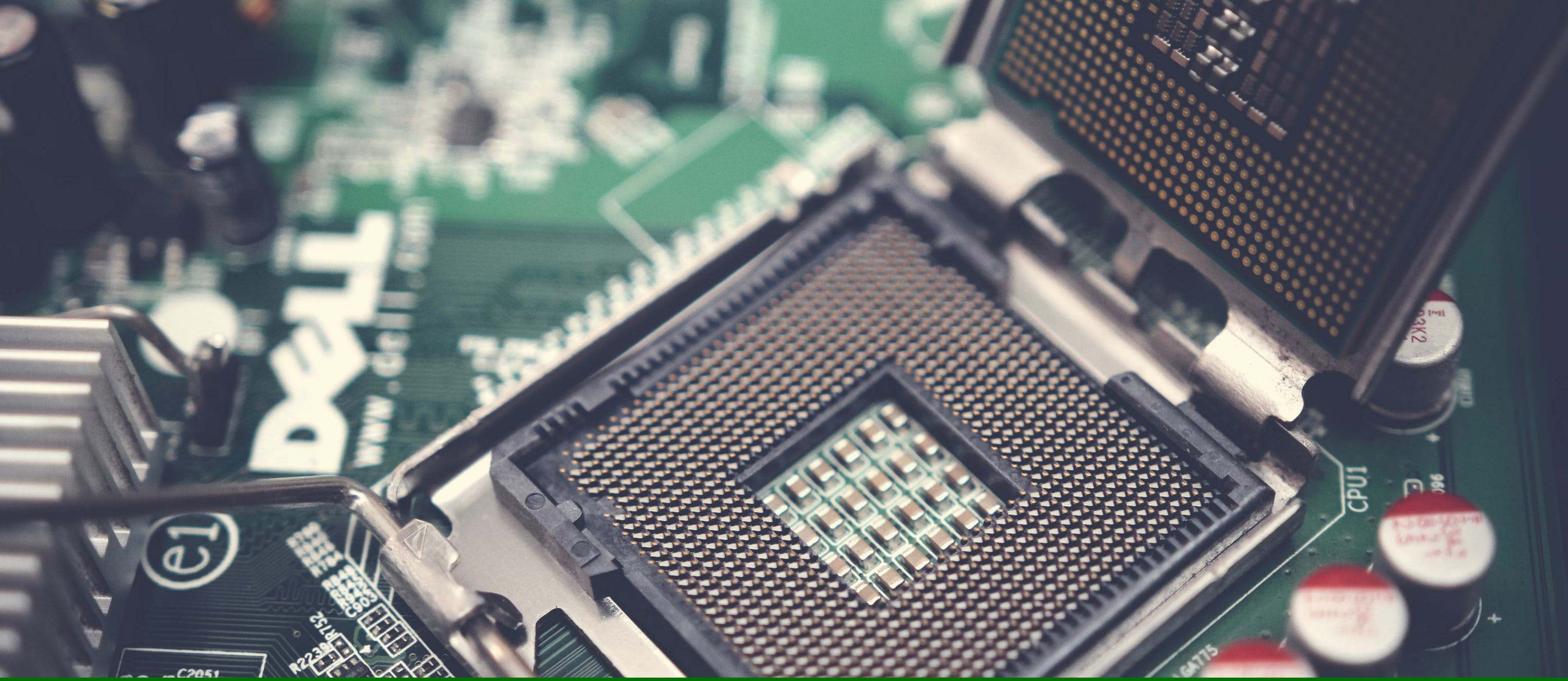
Step 0:
Obtaining requirements


Database
Mainframe
ETL
Lotus Notes
Client 1
Client 2
Client 3


Database
Mainframe
ETL
Lotus Notes
Client 1
Client 2
Client 3

DDD, Event Storming etc

That sweet, summer’s children 🌞

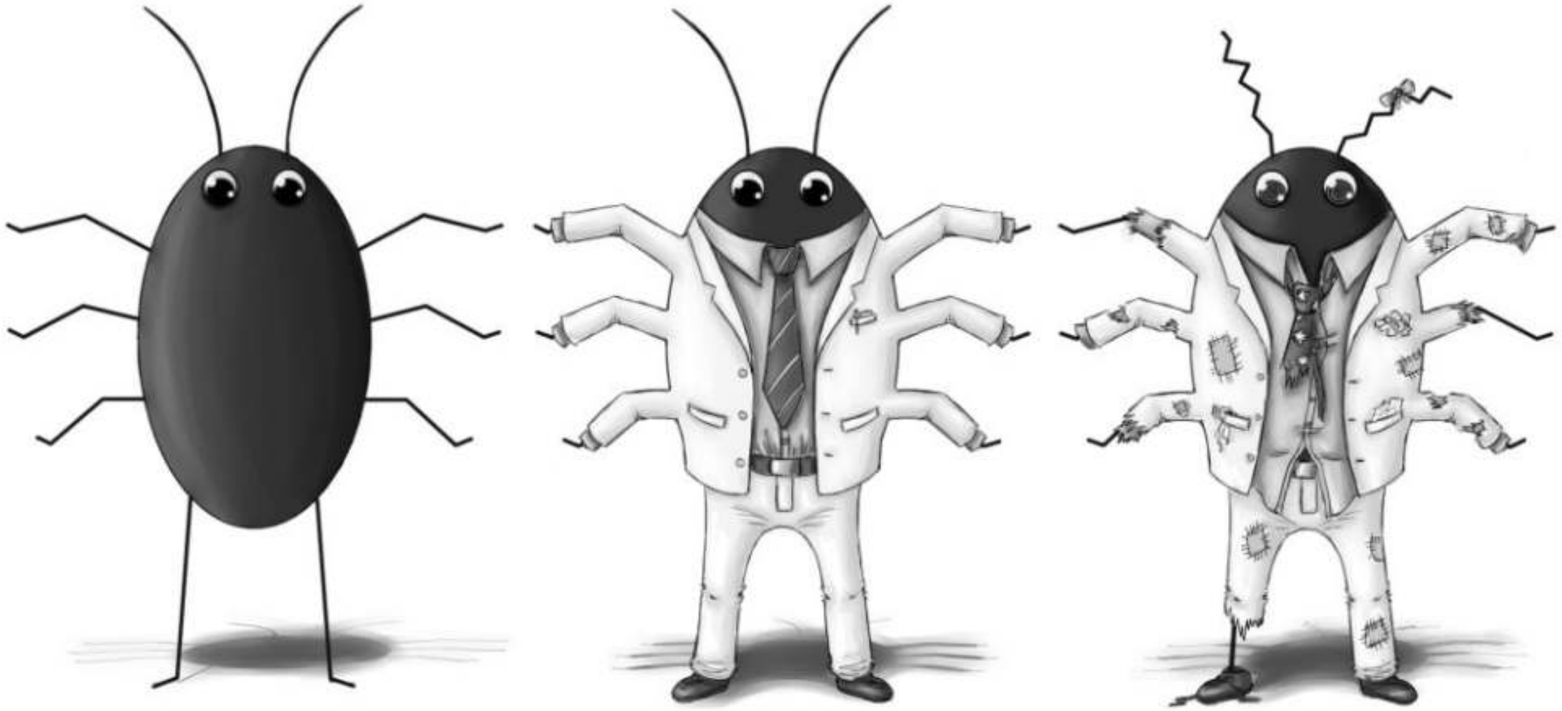


It is said that today's processors are so complex that there is no person in the world who fully understands them

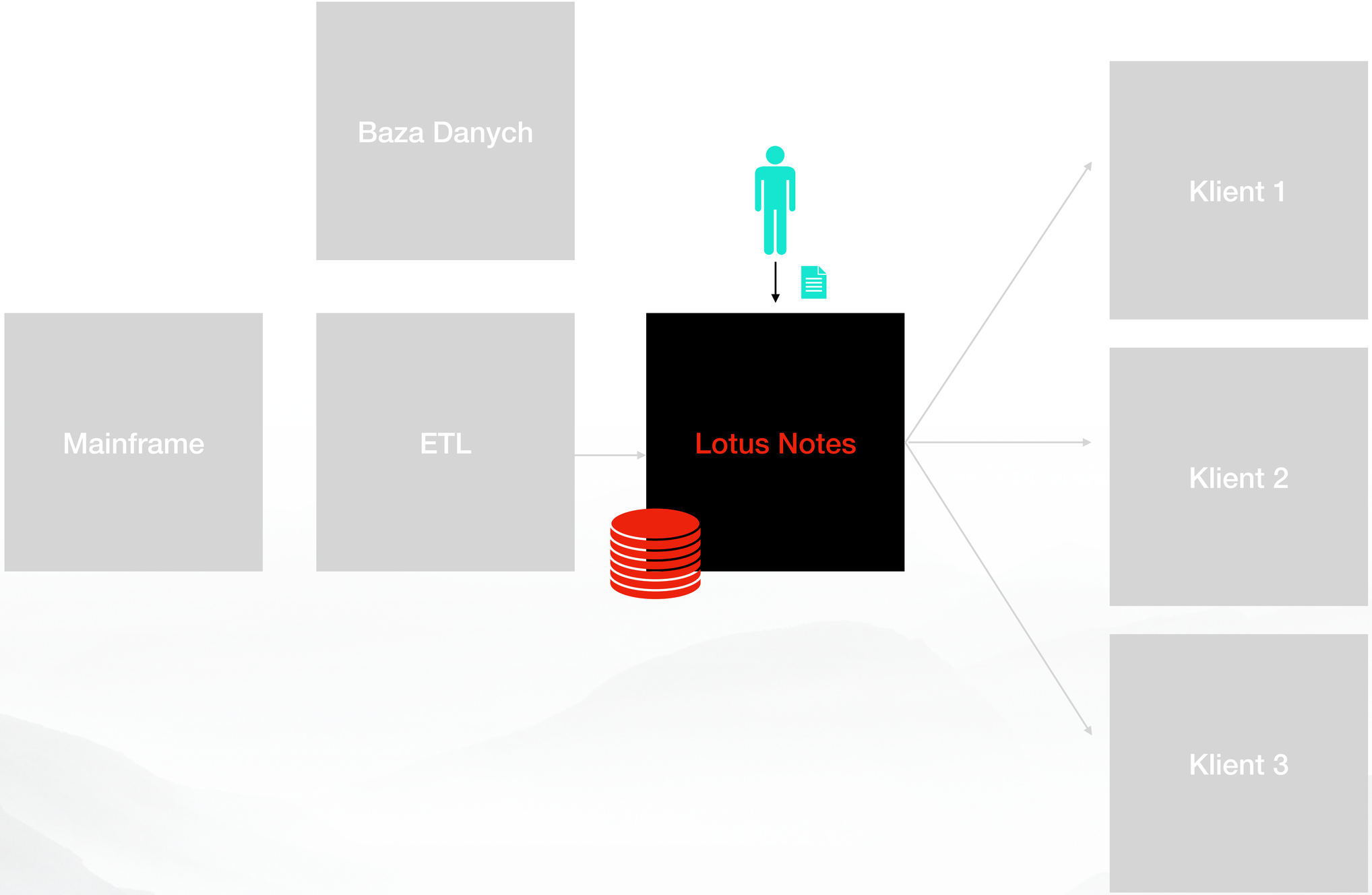
It's exactly the same with business processes in large companies 😵‍💫

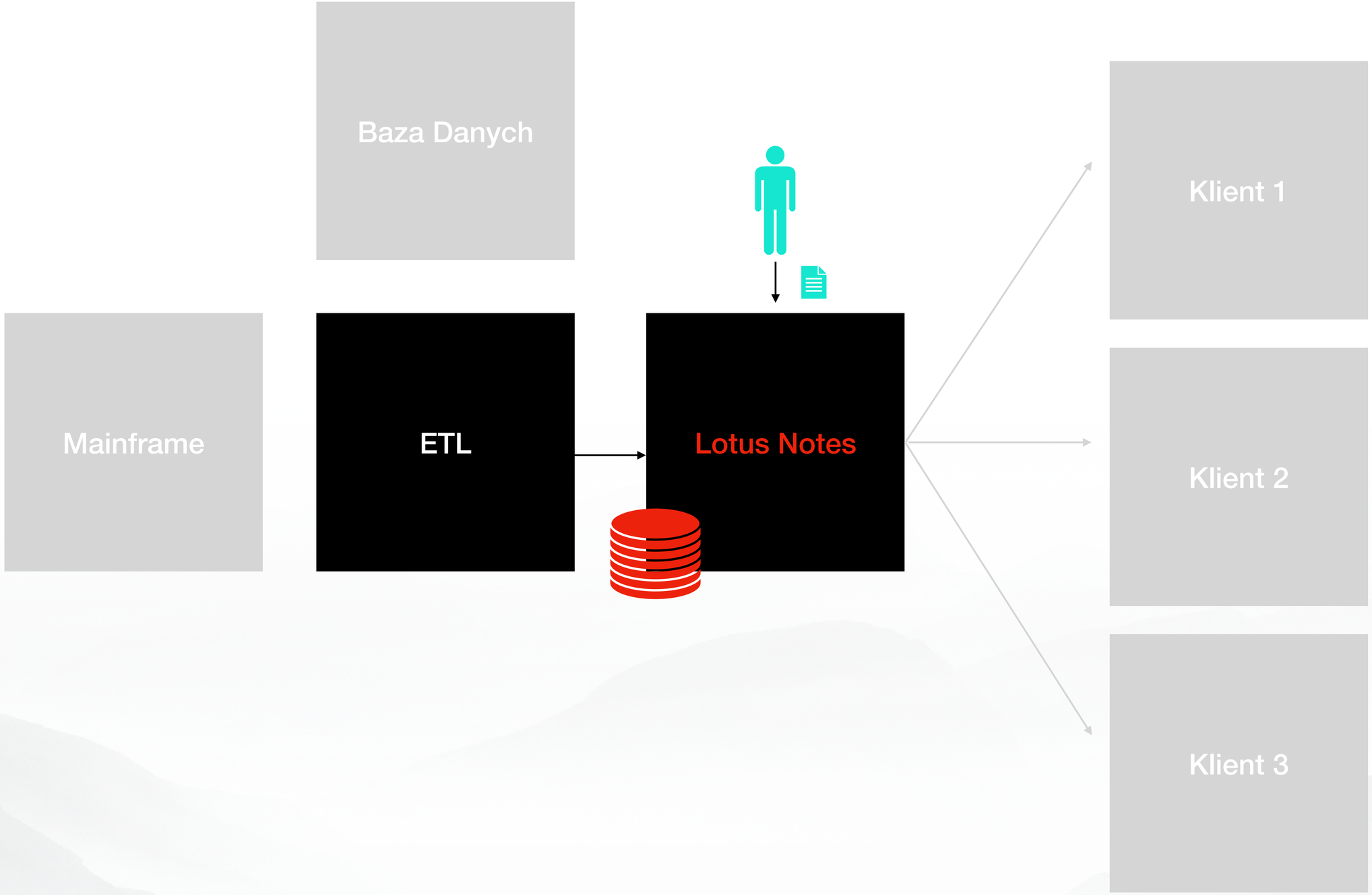
And business acts as IT allows it to do so

My grandfather typed NULL in this form field, my father typed NULL in this form field - so I'm typing too... then it works.



BUG FEATURE IN LEGACY


Baza Danych
Mainframe
ETL
Lotus Notes
Klient 1
Klient 2
Klient 3


Baza Danych
Mainframe
ETL
Lotus Notes
Klient 1
Klient 2
Klient 3

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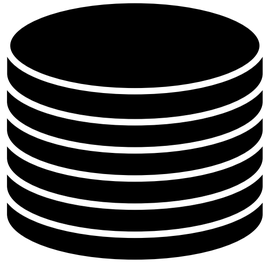
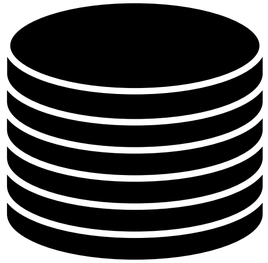
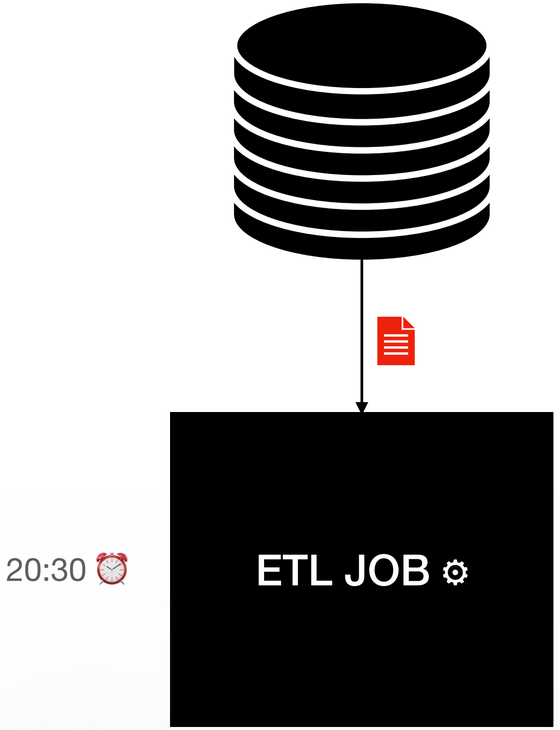
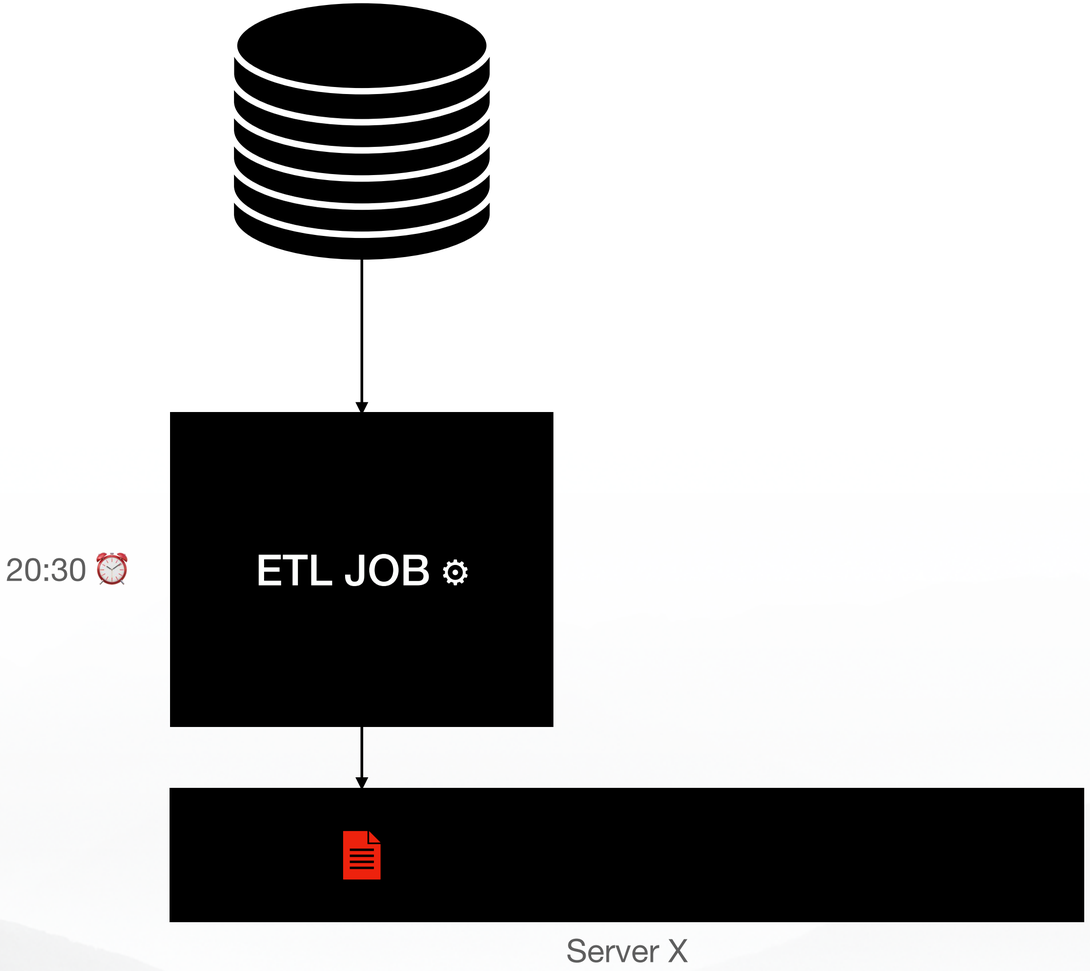


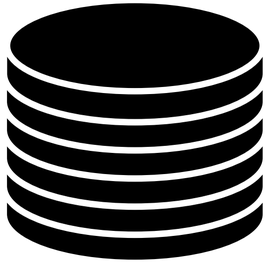


20:30 ⏰

ETL JOB ⚙


20:30 ⏰
ETL JOB ⚙

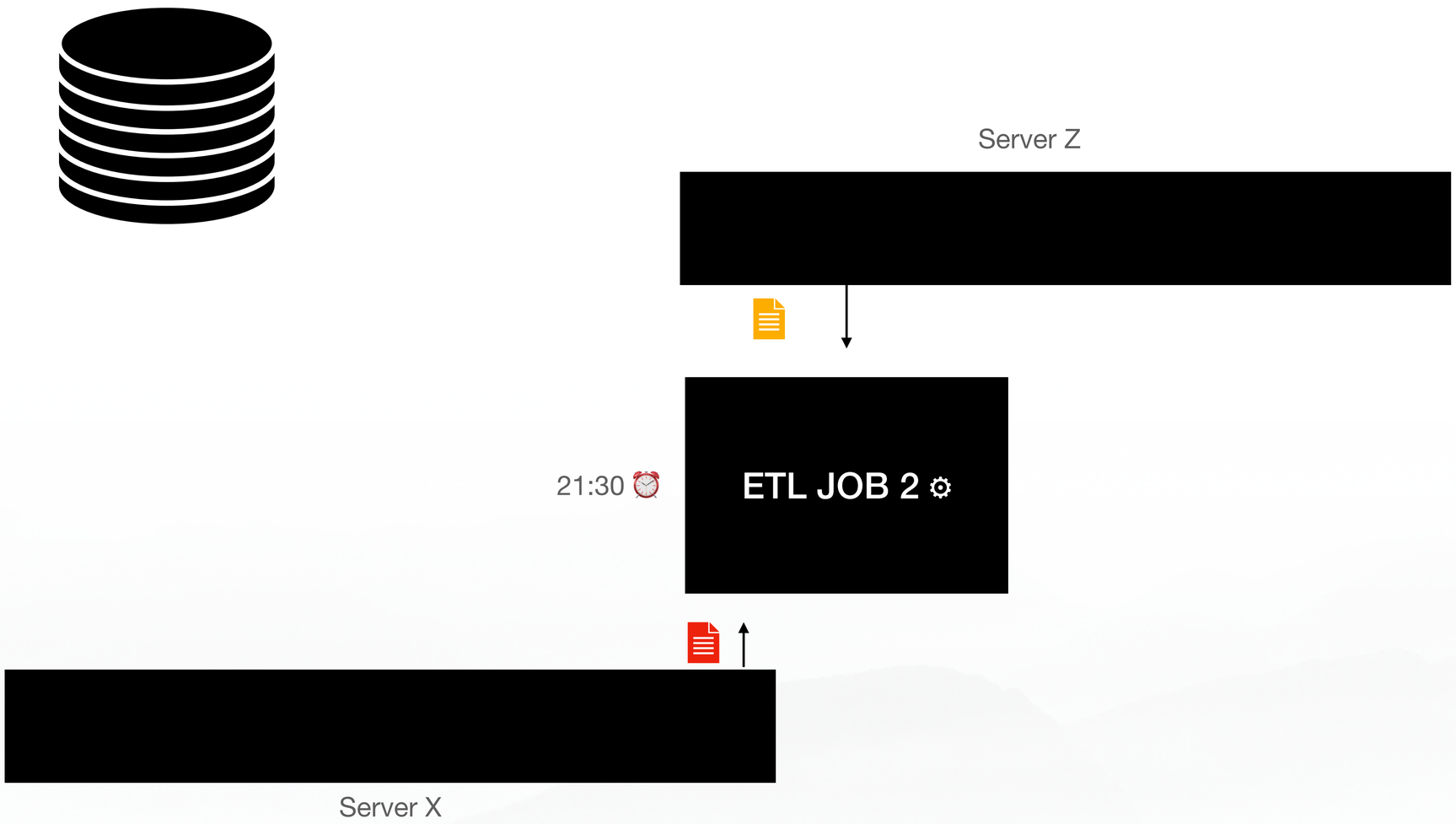

20:30 ⏰
ETL JOB ⚙
Server X

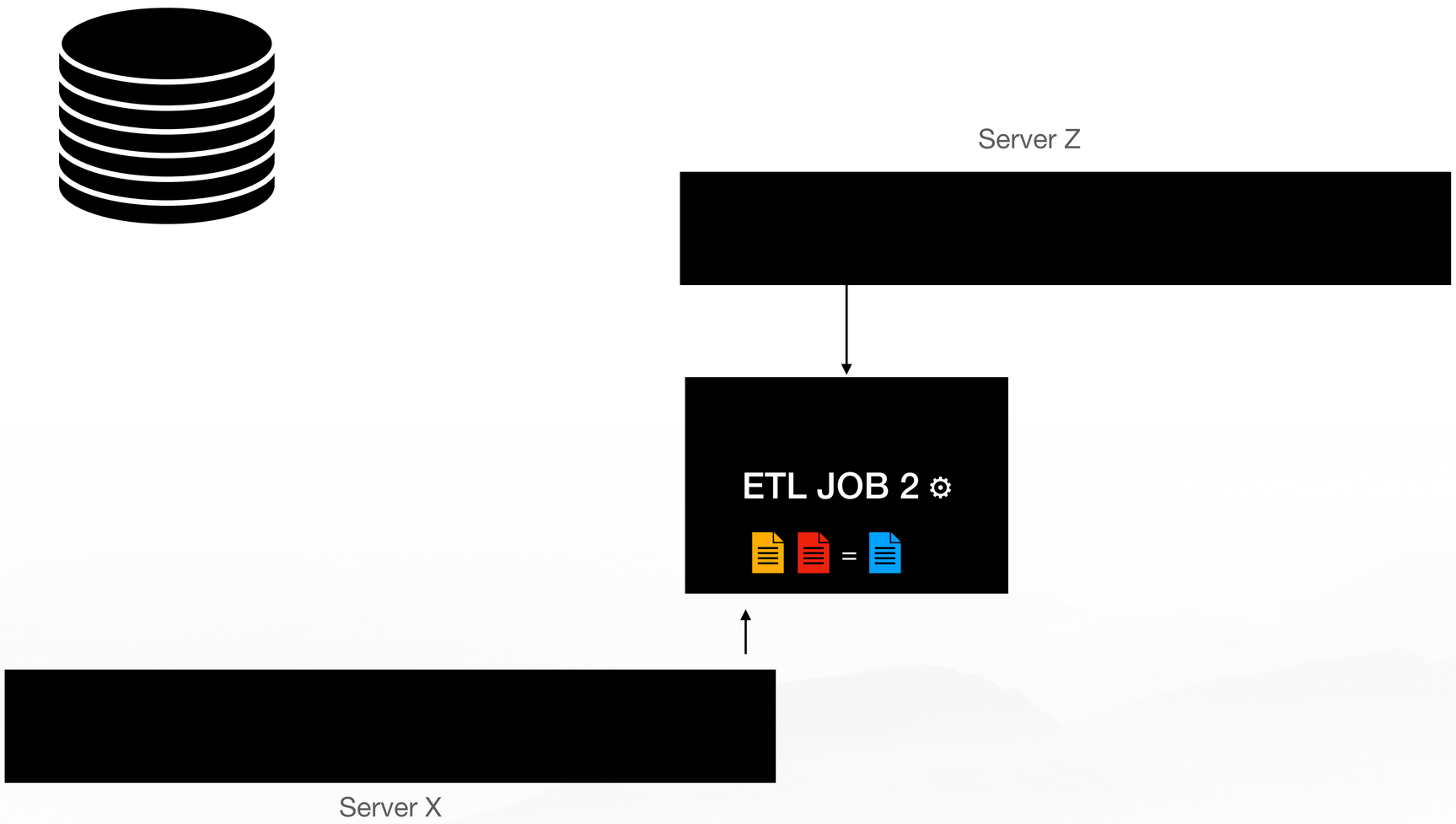


21:30 ⏰

ETL JOB 2 ⚙

Server X


Server Z
21:30
ETL JOB 2
Server X


Server Z
ETL JOB 2
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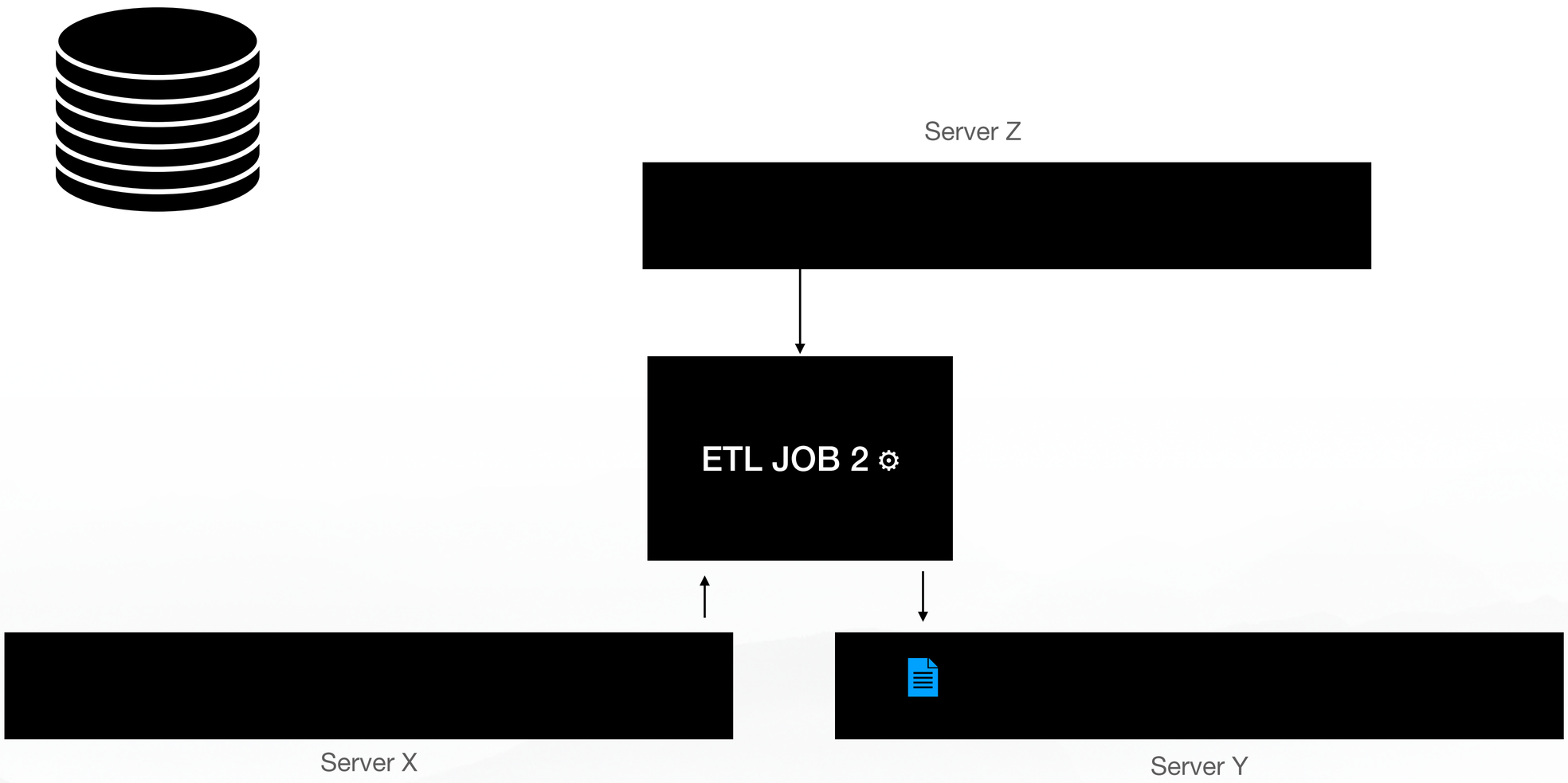
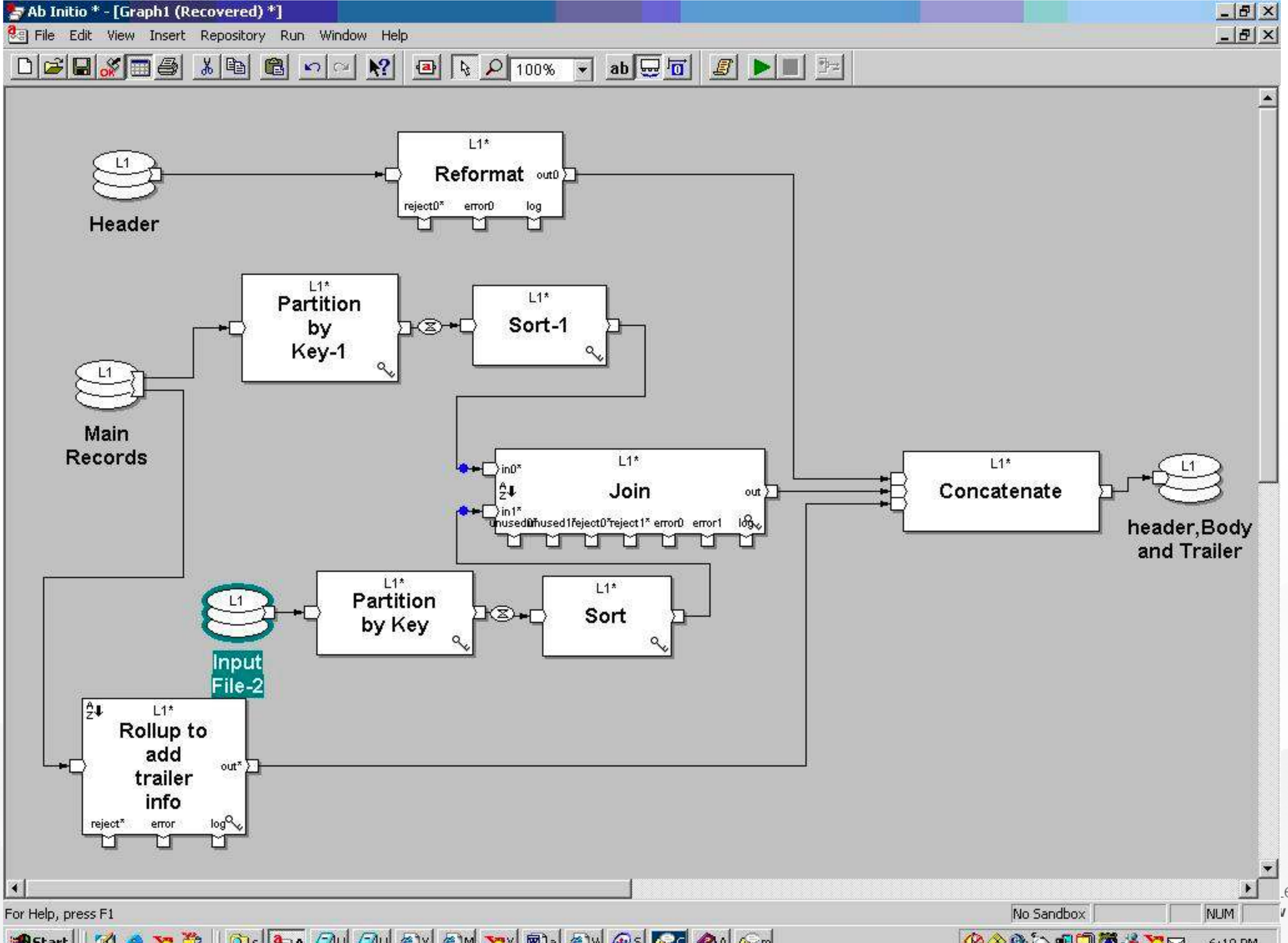
Server X


Server Z
ETL JOB 2
Server X
Server Y



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bubble
shopify
AppGyver
Airtable
Trello
Canva
webflow
ZOHO
clorik
make
formerly Integromat
zapier
n8n.io
Framer
Browse AI
Calendly
Typeform
Figma
stripe
WordPress
SQUARESPACE
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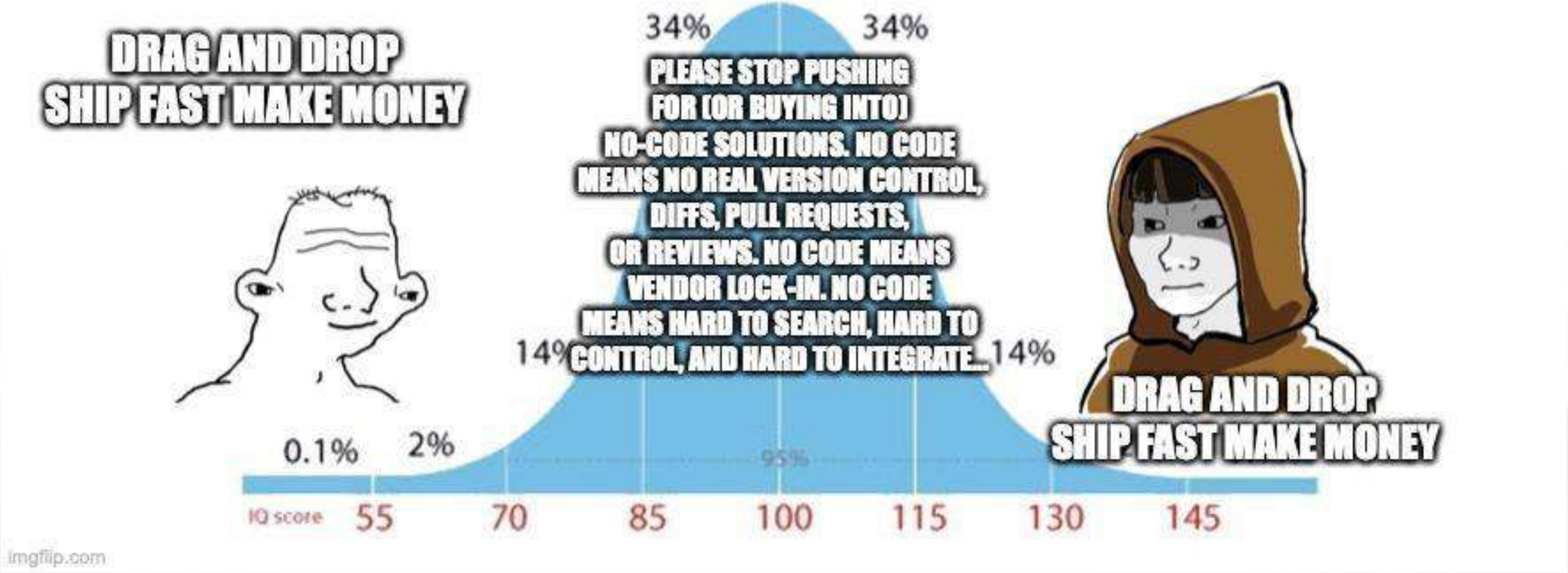
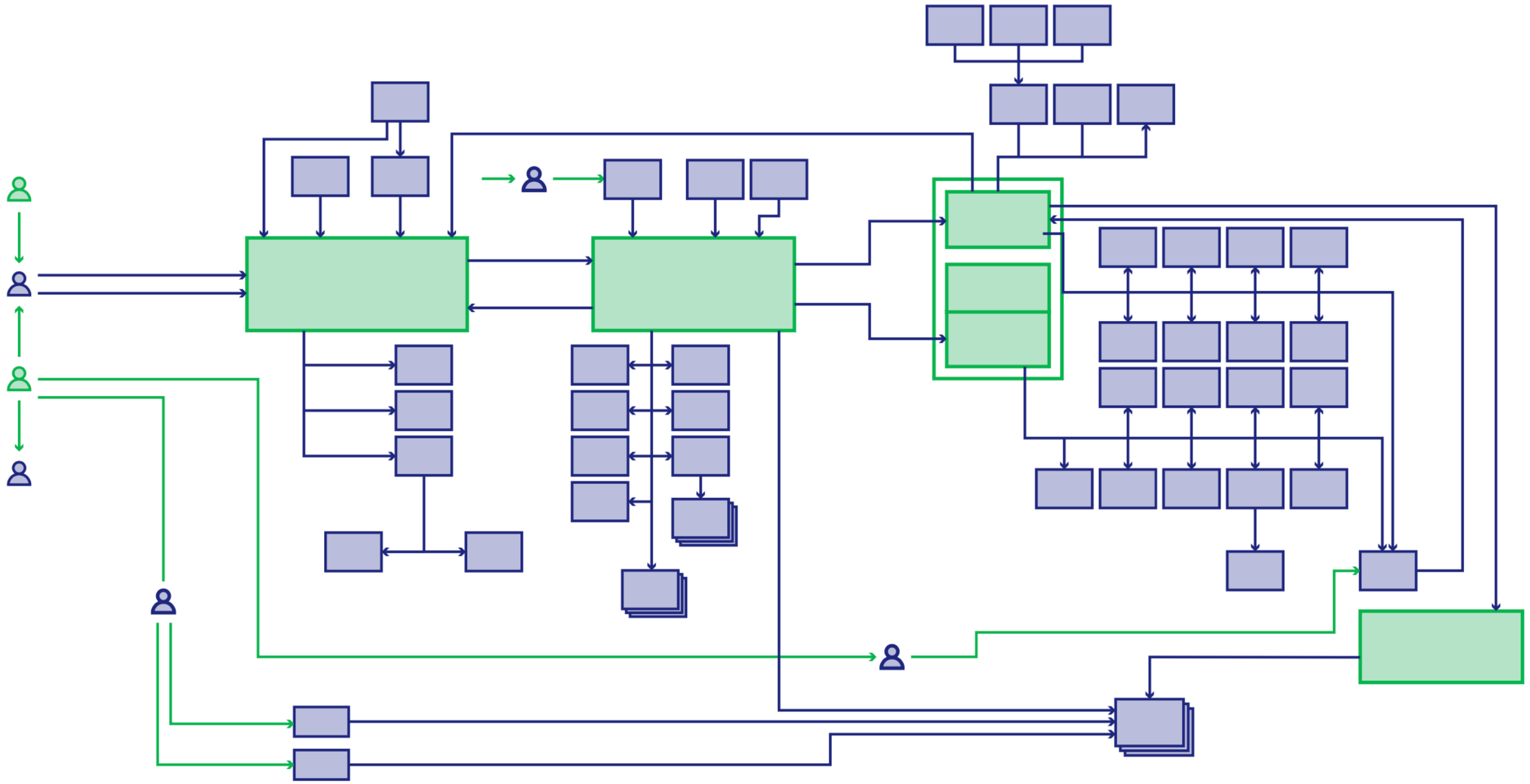
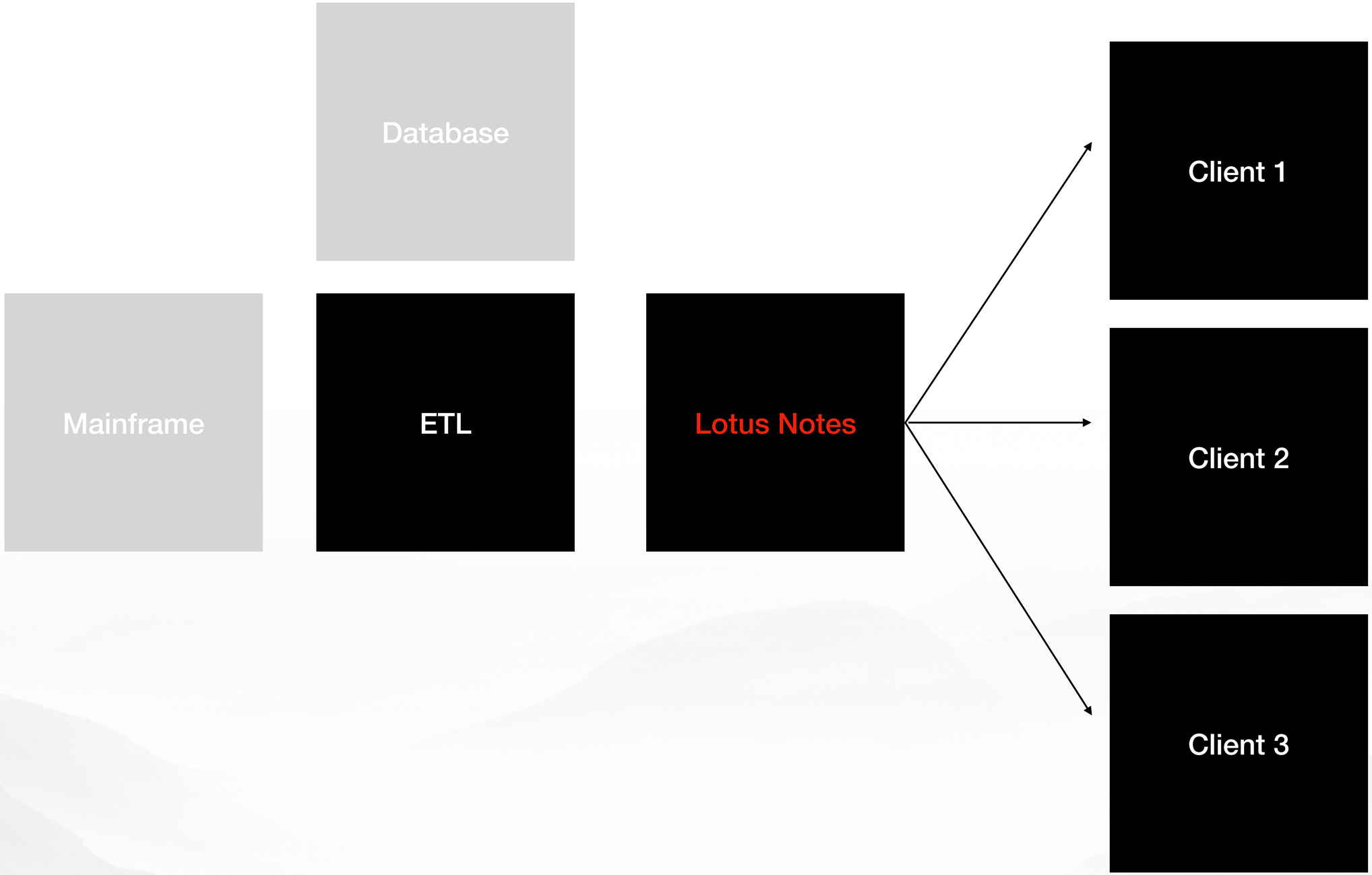
gumroad
Pabbly
Connect

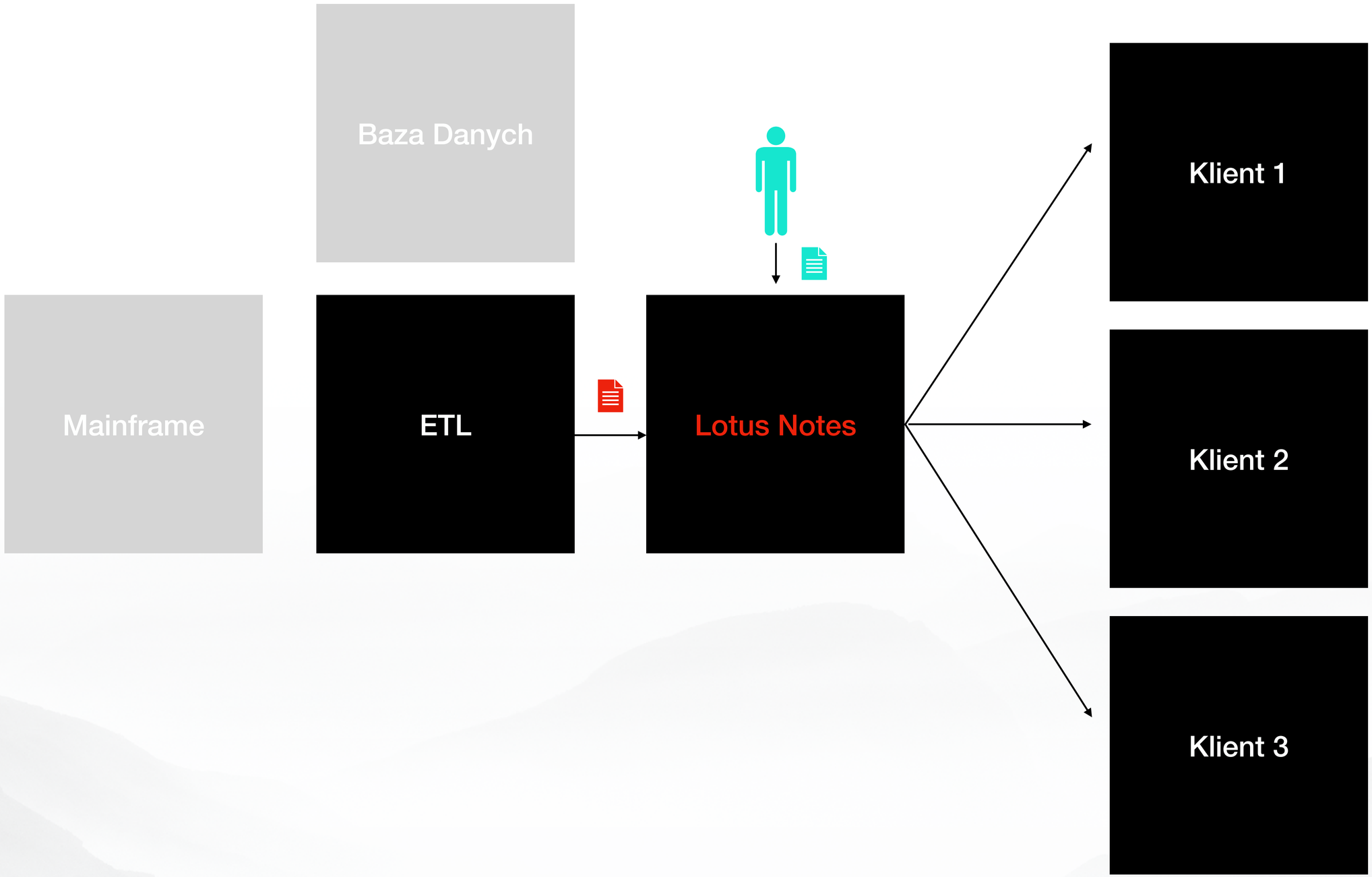

DRAG AND DROP
SHIP FAST MAKE MONEY
34%
34%
PLEASE STOP PUSHING FOR (OR BUYING INTO) NO-CODE SOLUTIONS. NO CODE MEANS NO REAL VERSION CONTROL, DIFFS, PULL REQUESTS, OR REVIEWS. NO CODE MEANS VENDOR LOCK-IN. NO CODE MEANS HARD TO SEARCH, HARD TO CONTROL, AND HARD TO INTEGRATE...
14%
14%
DRAG AND DROP
SHIP FAST MAKE MONEY
0.1%
2%
95%
IQ score
55
70
85
100
115
130
145
imgflip.com

Sharepoint i Zendesk

Do the Documentation!




Database
Mainframe
ETL
Lotus Notes
Client 1
Client 2
Client 3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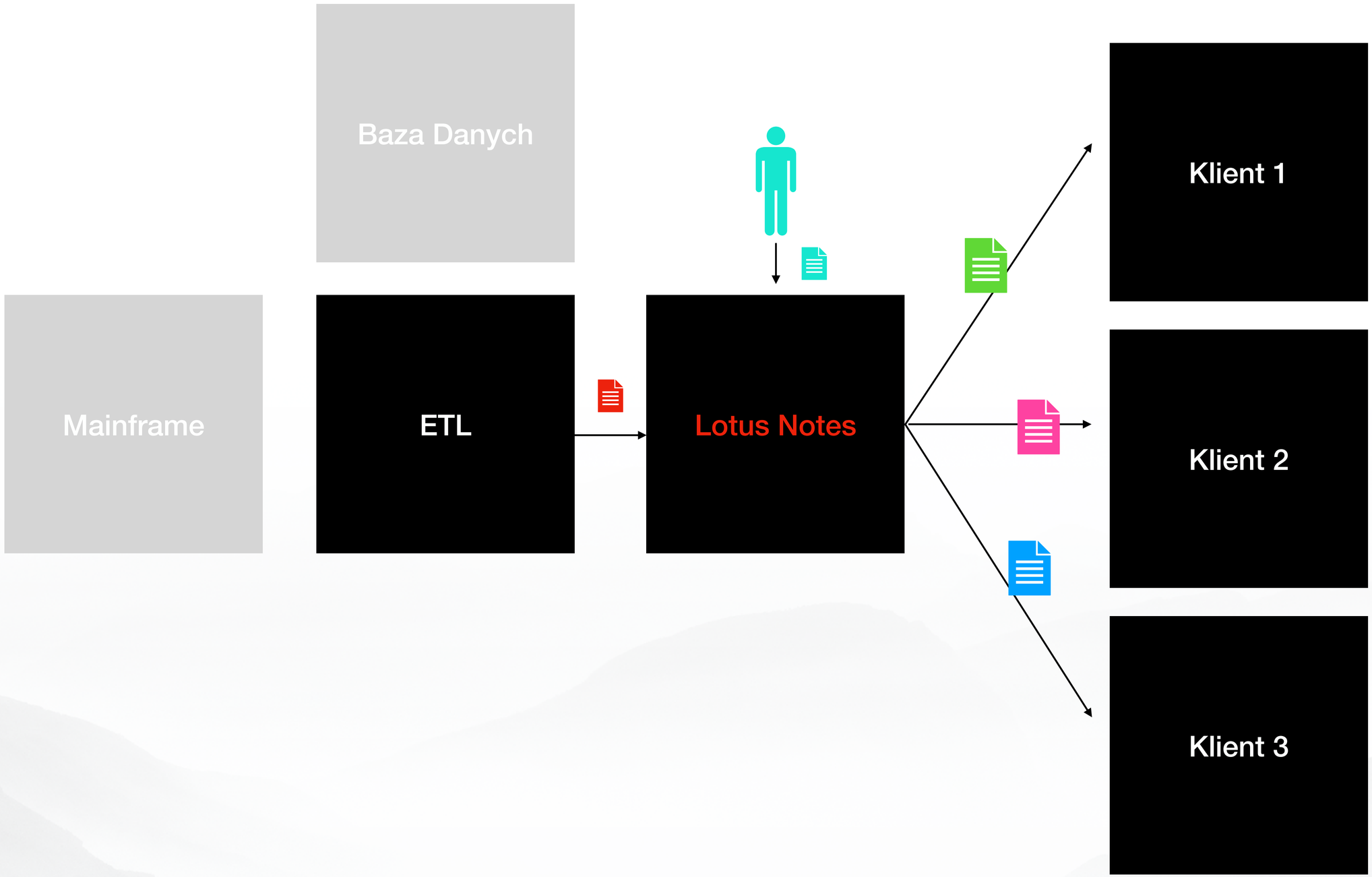
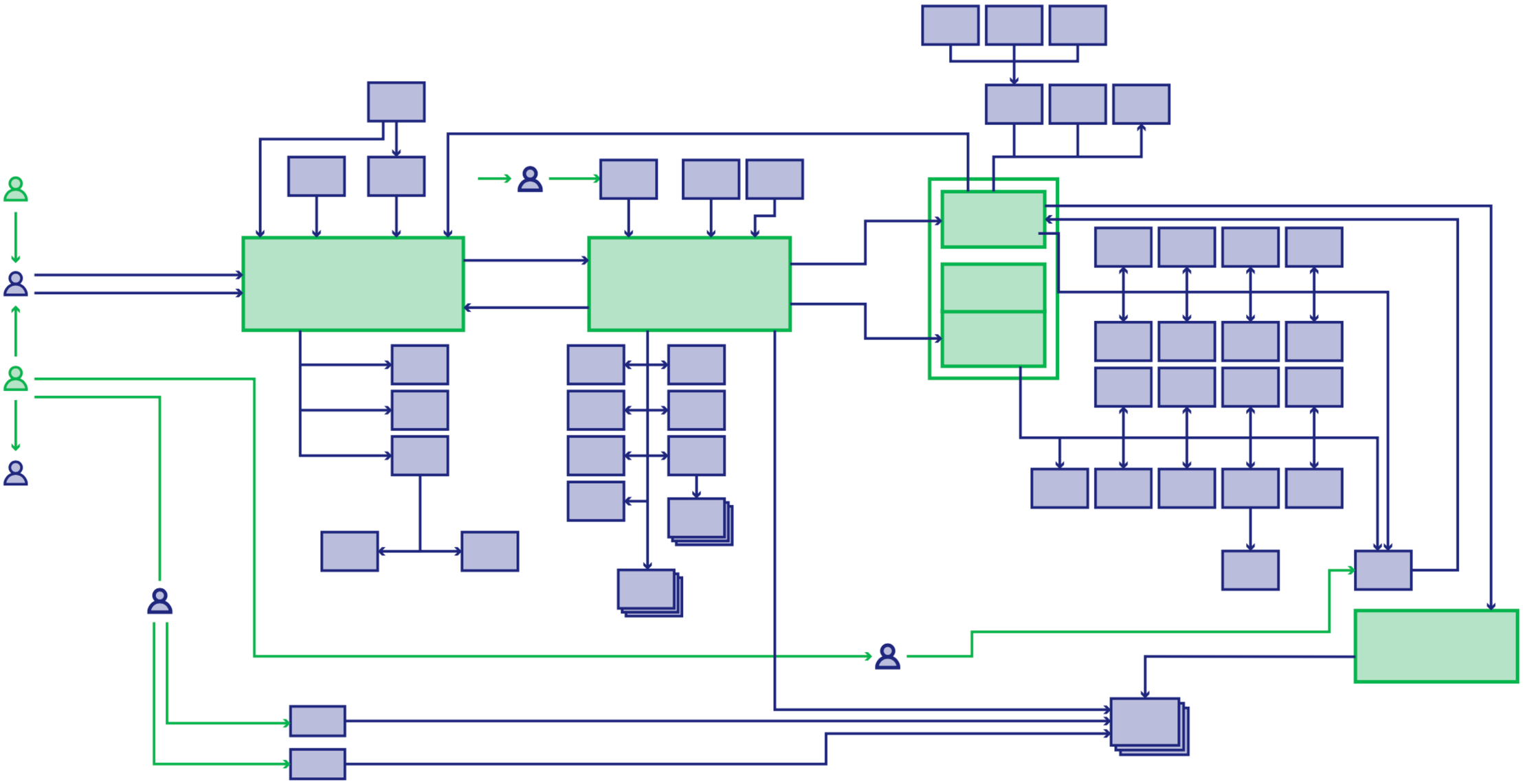
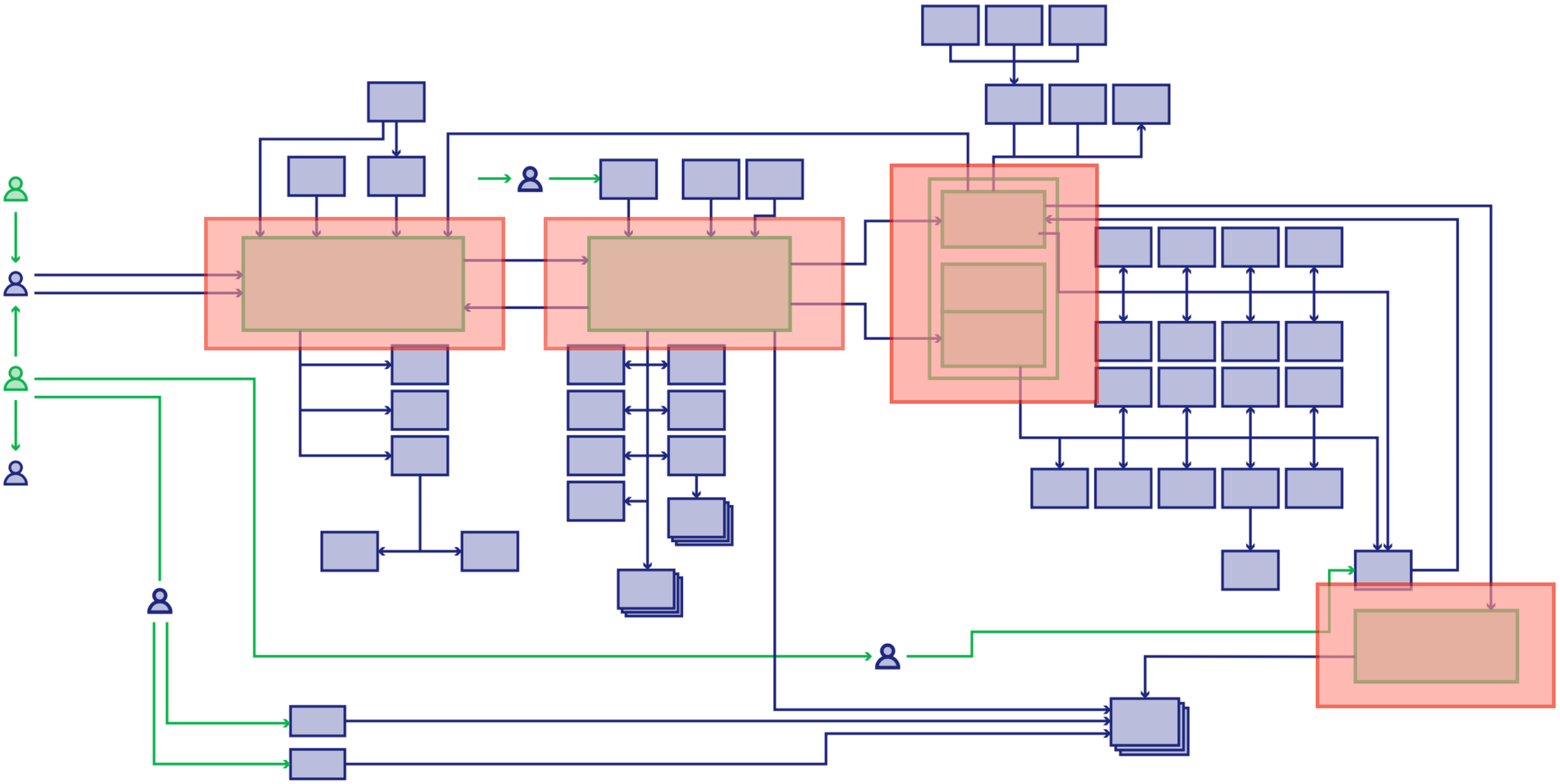
ETL
Lotus Notes
Klient 1
Klient 2
Klient 3


Baza Danych
Mainframe
ETL
Lotus Notes
Klient 1
Klient 2
Klient 3

Step 1:
Be the Proxie





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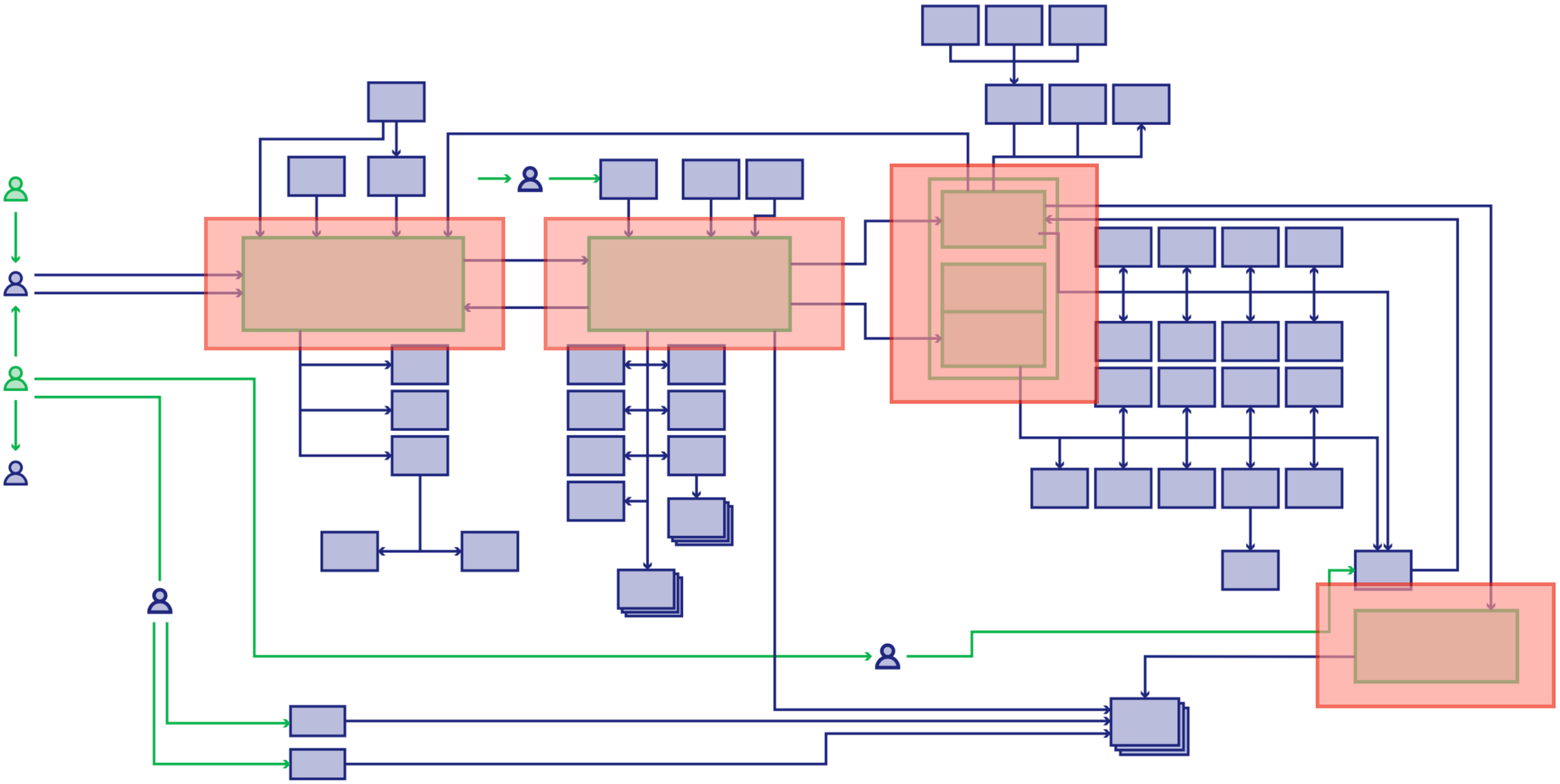
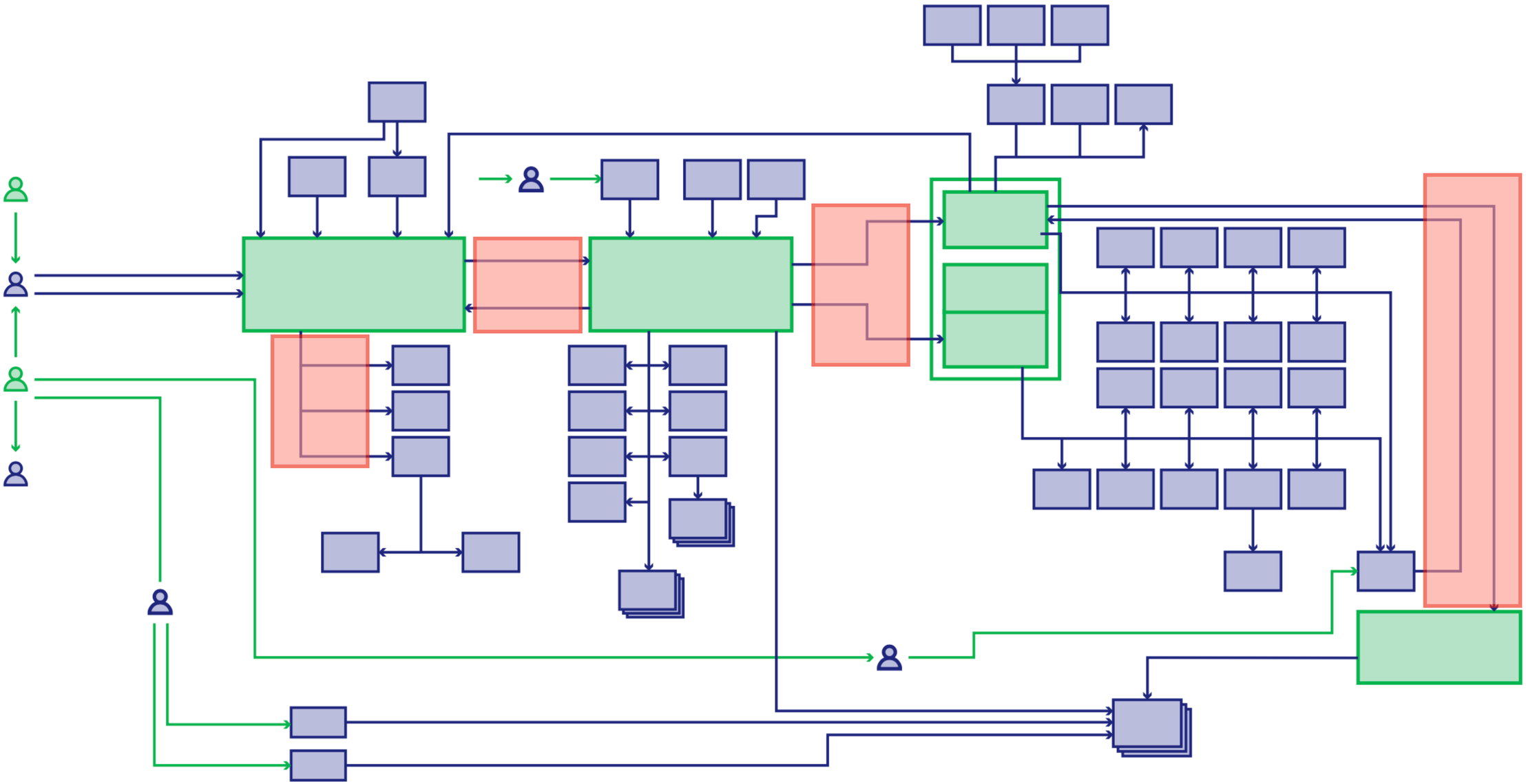
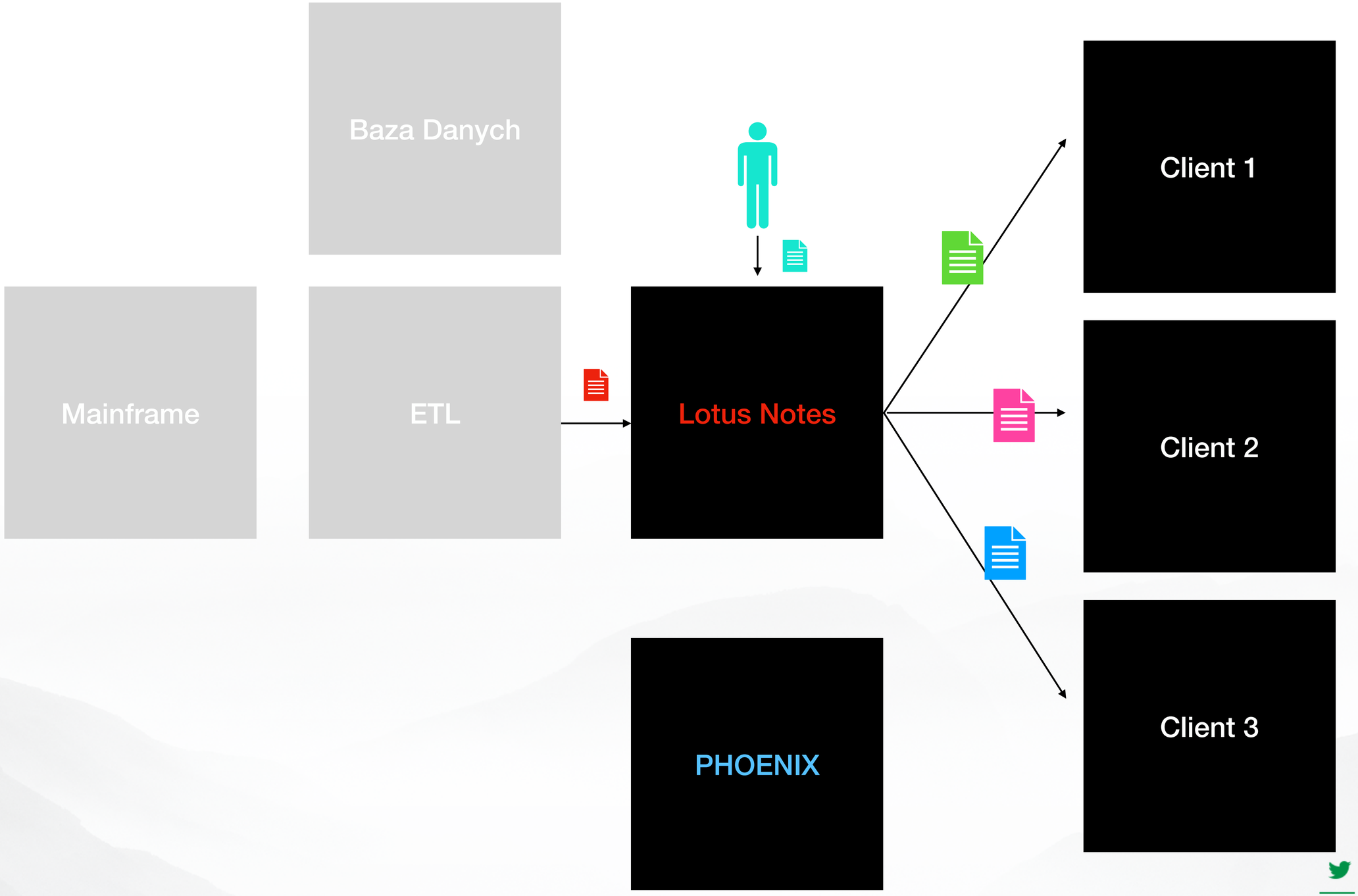
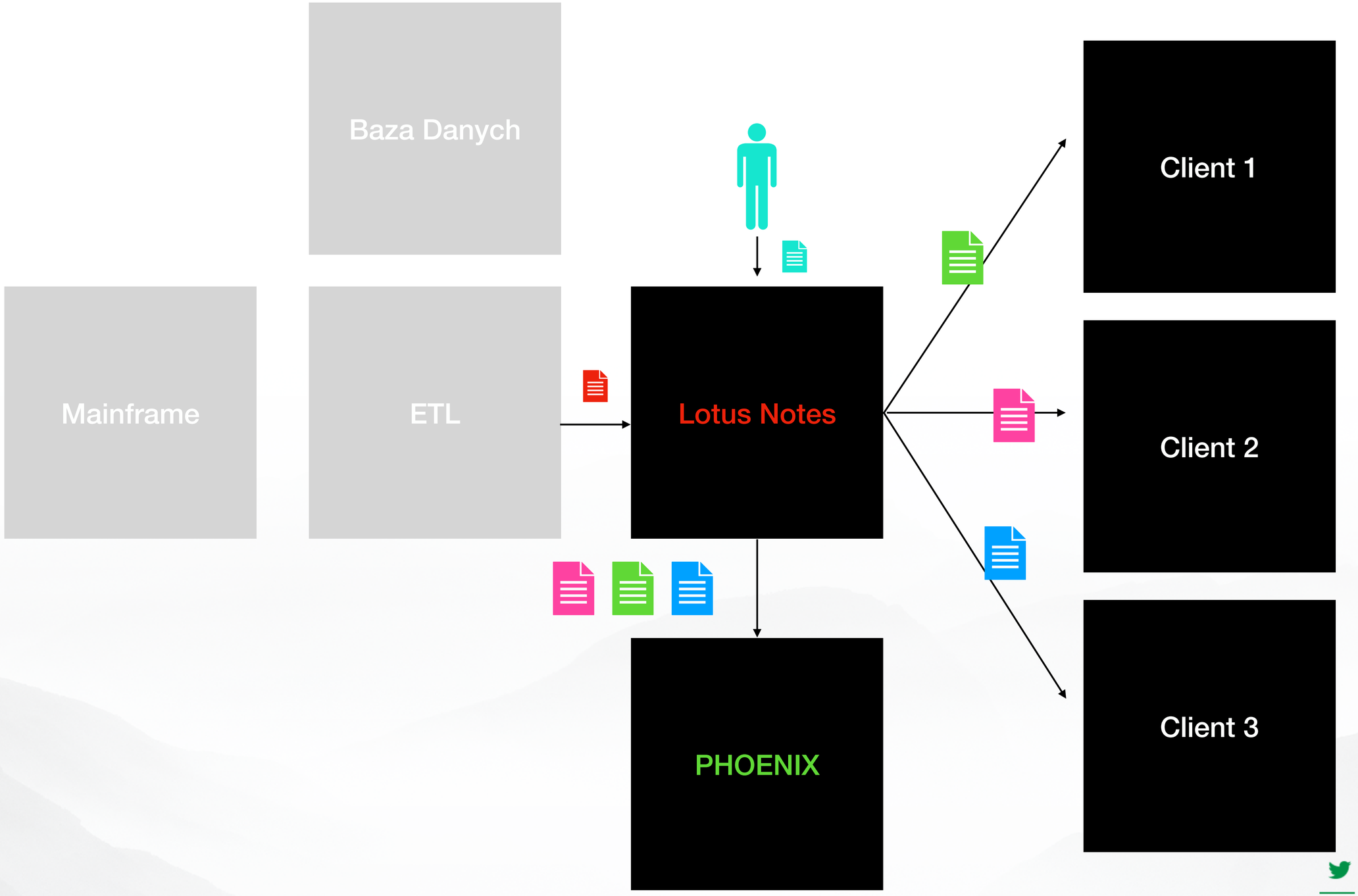





Baza Danych
Mainframe
ETL
Lotus Notes
PHOENIX
Client 1
Client 2
Client 3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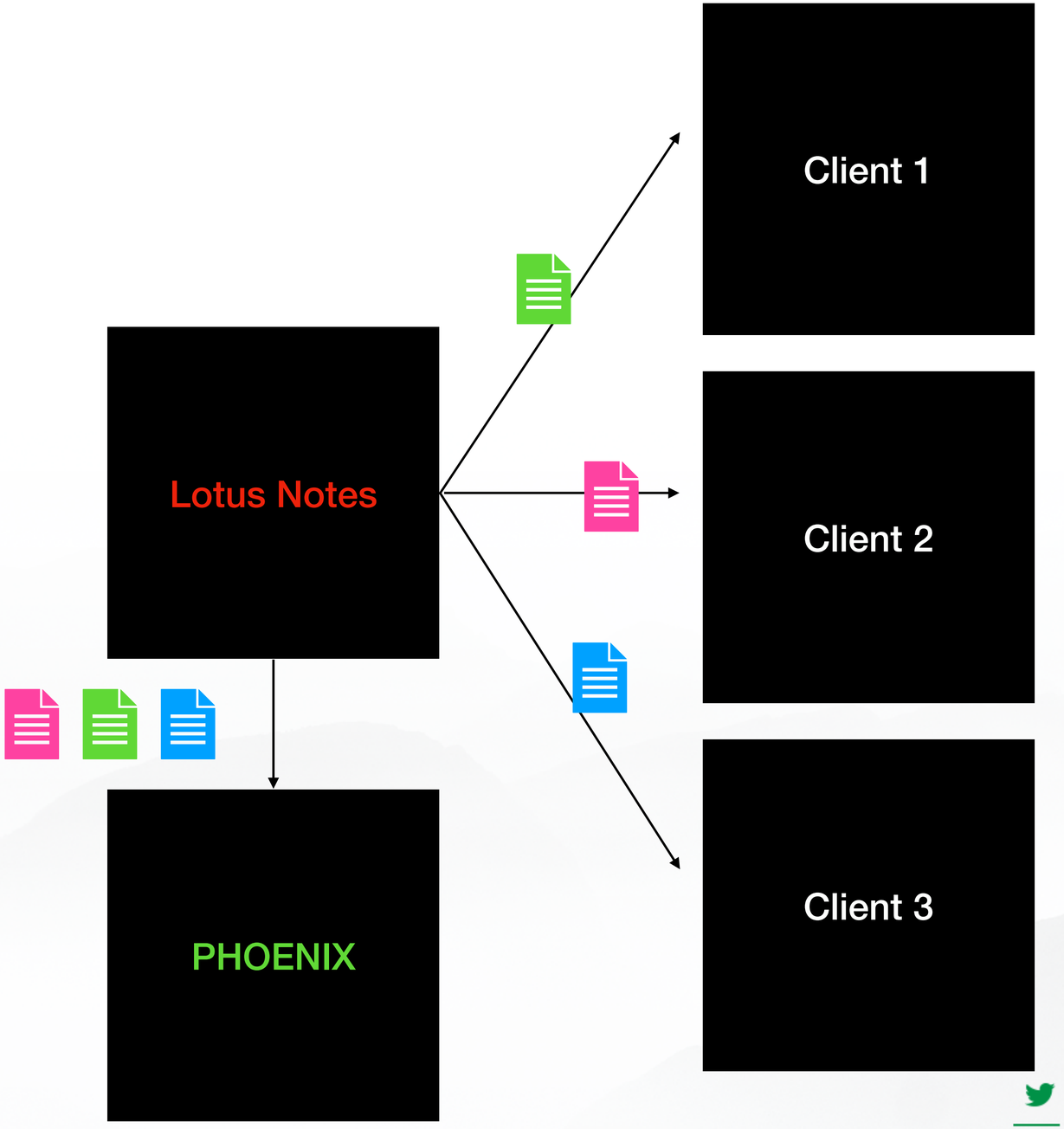
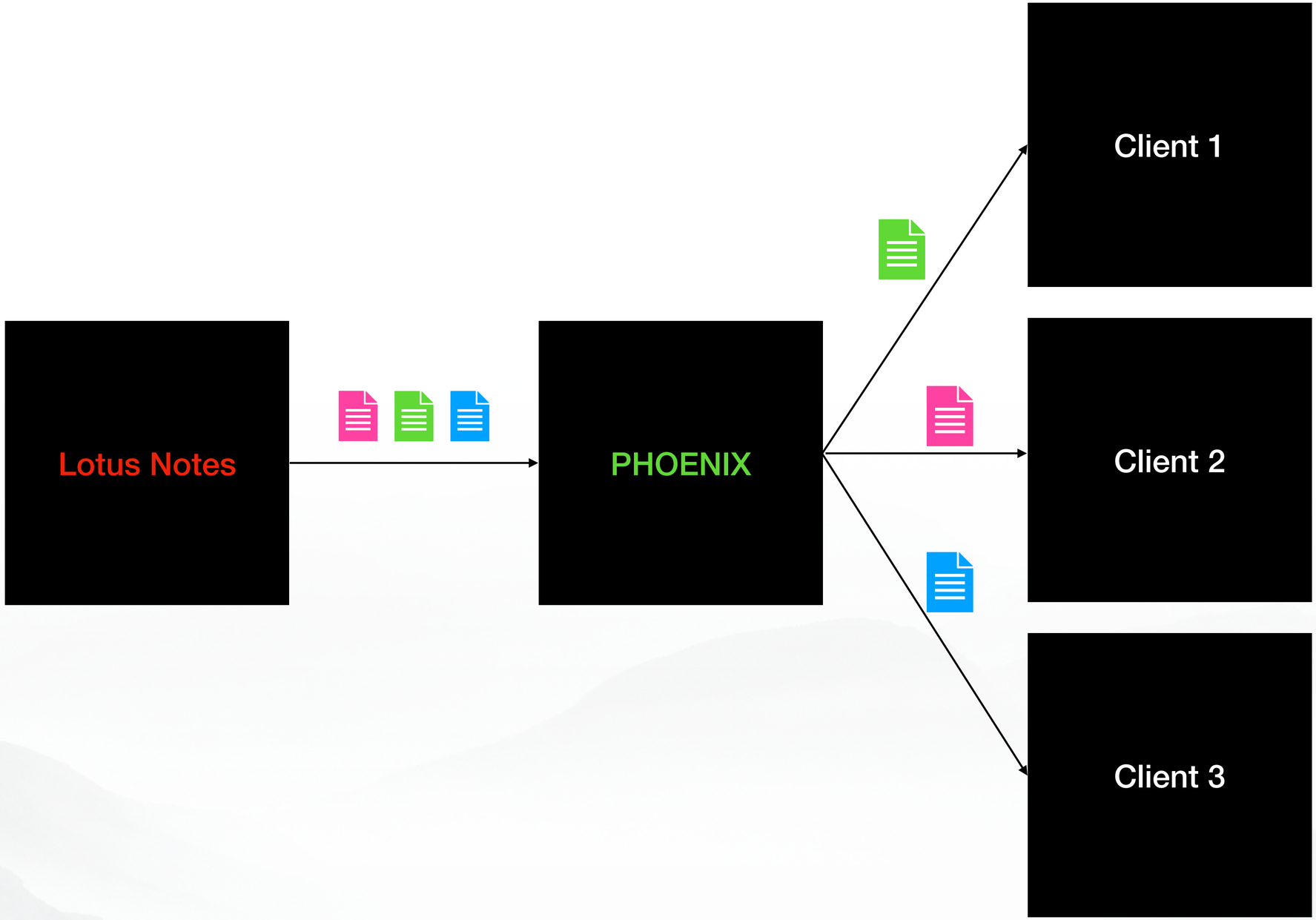
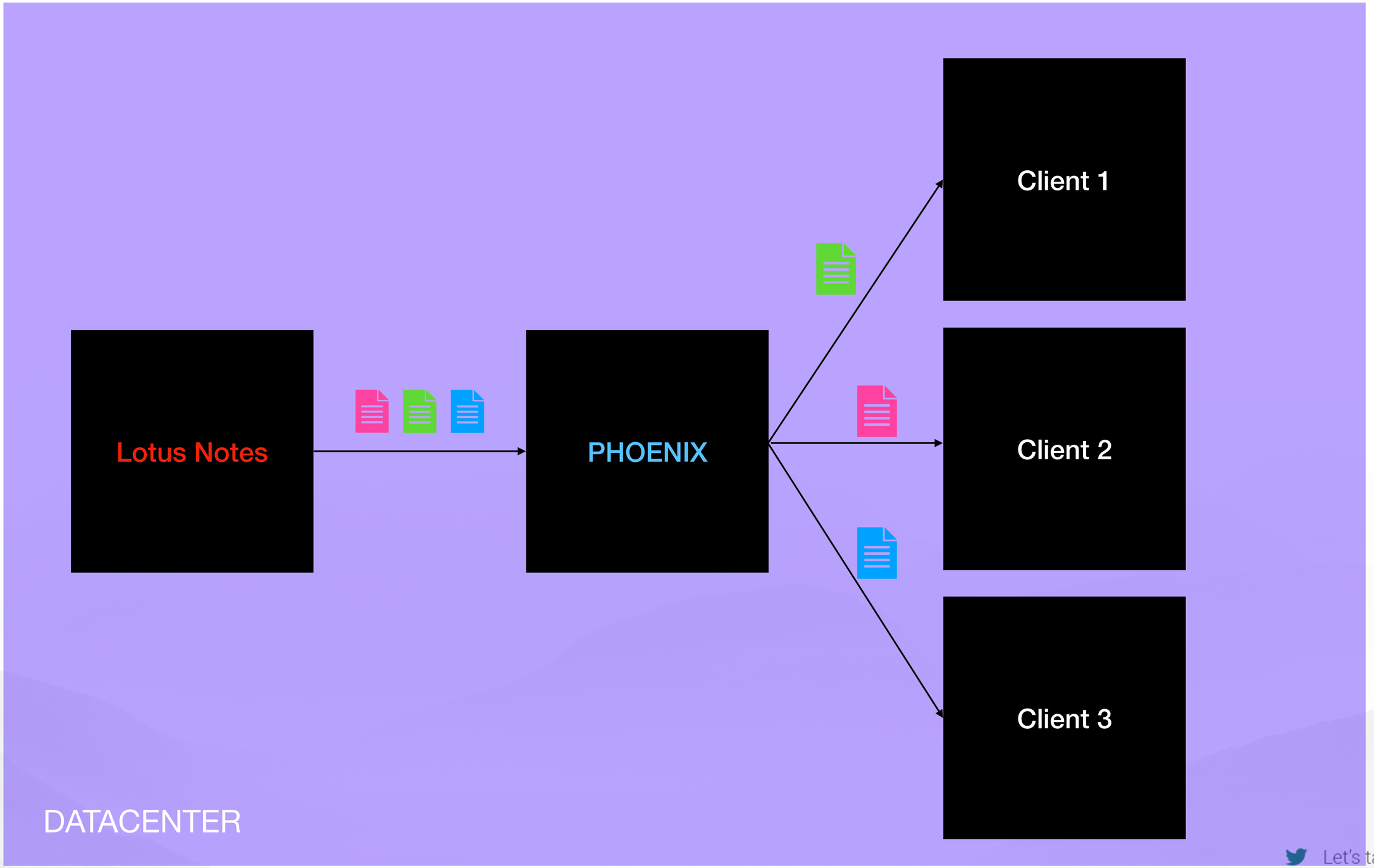
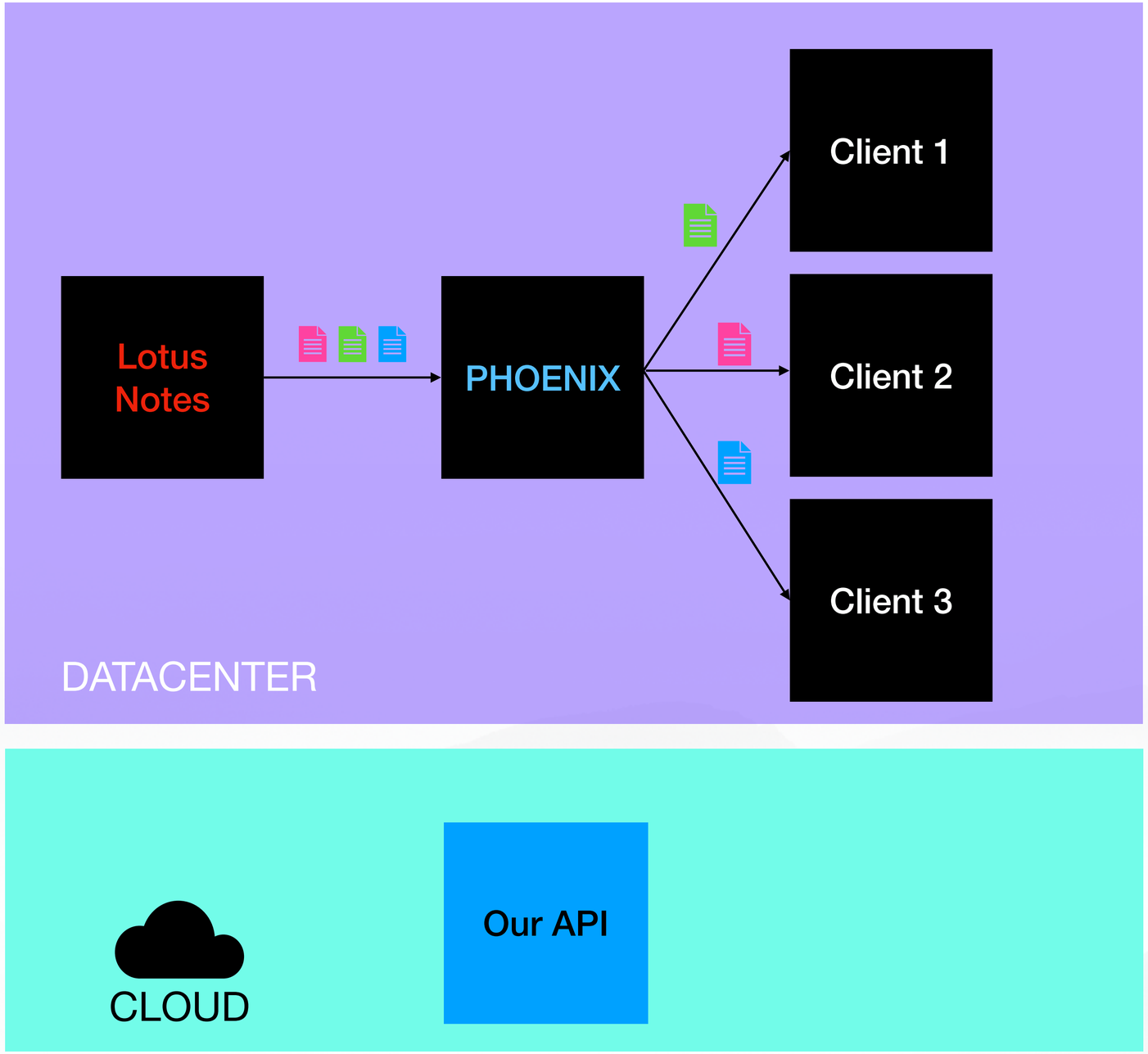
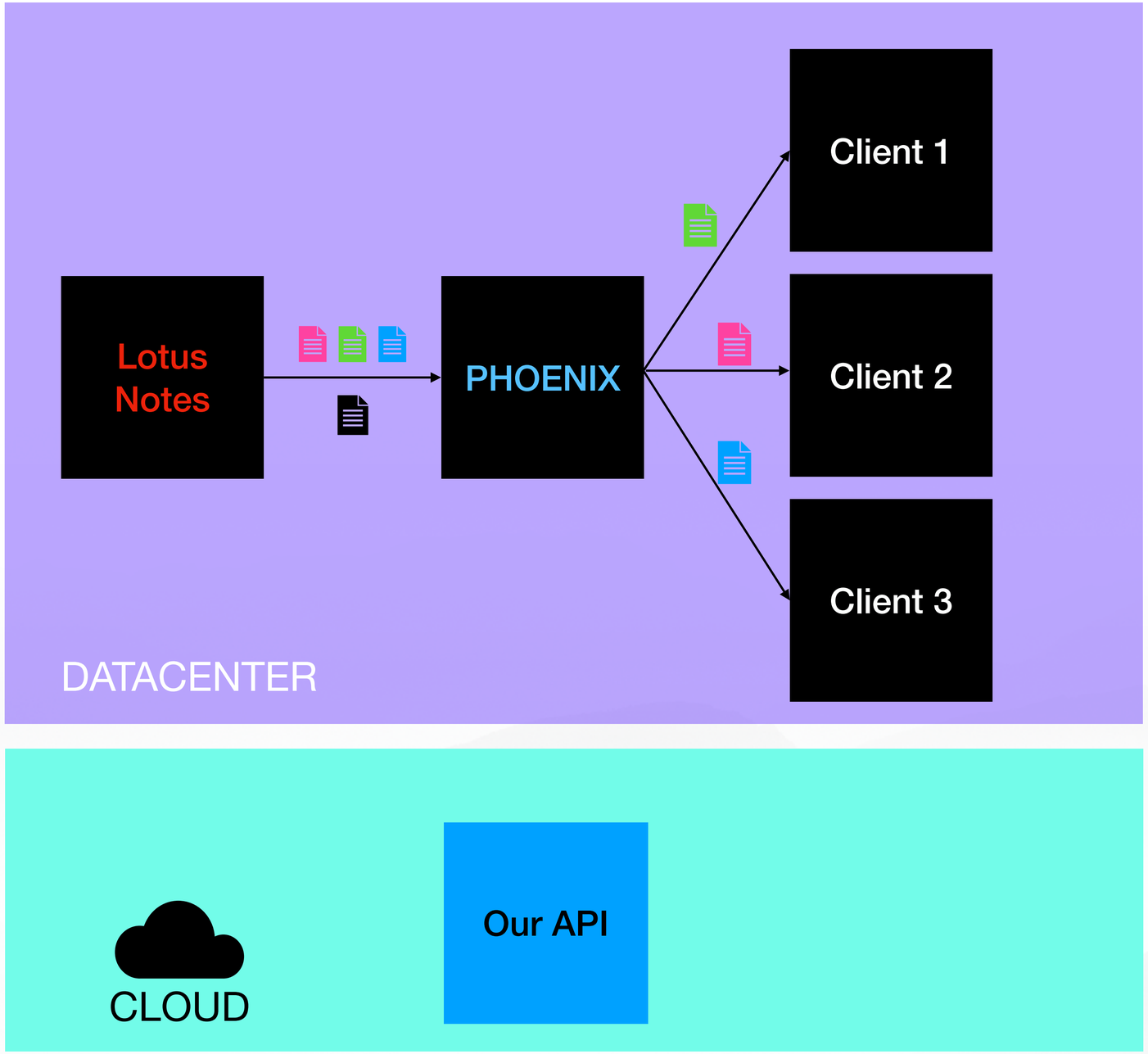

Client 1
Lotus Notes
Client 2
Client 3
PHOENIX

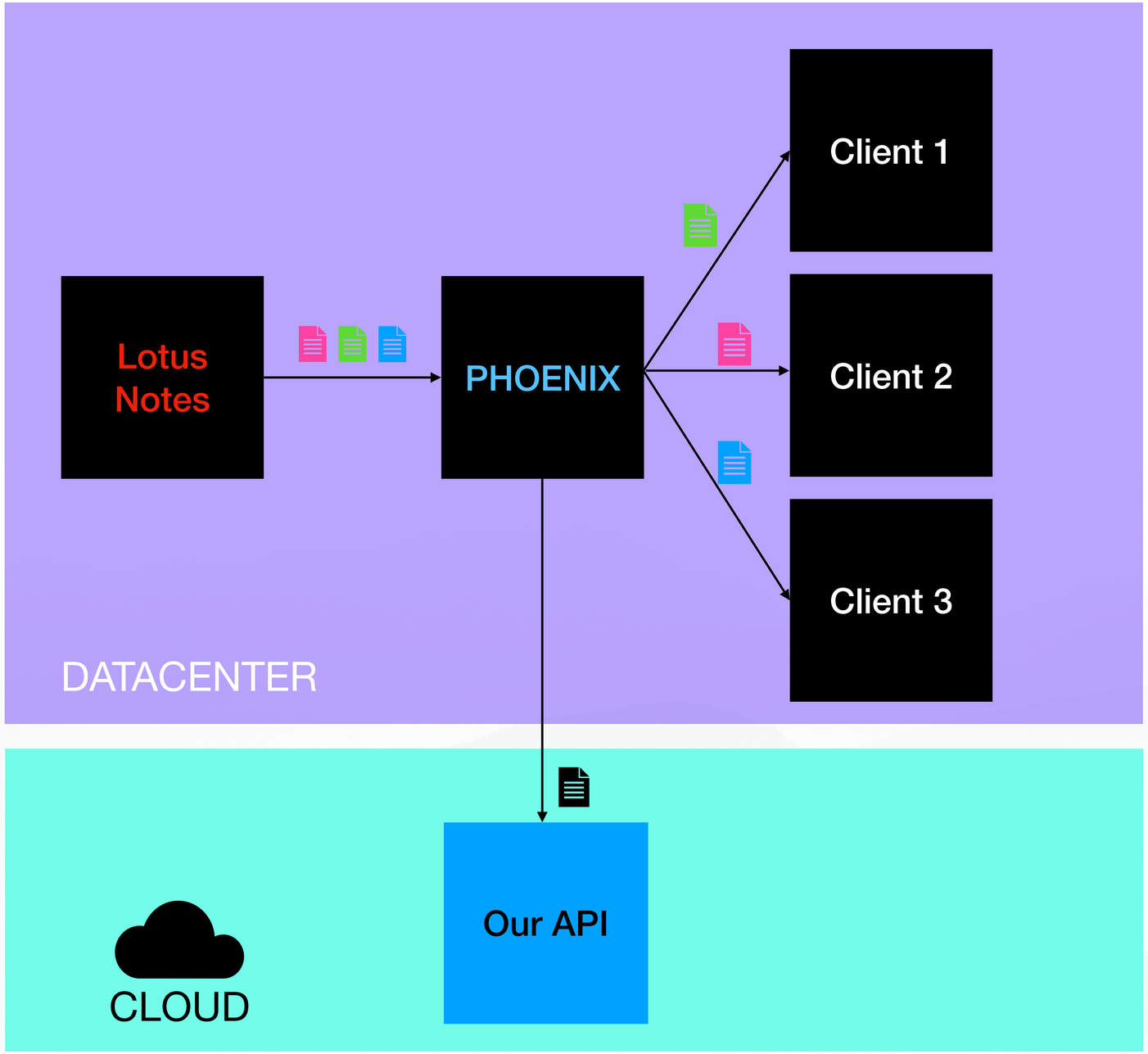

Lotus Notes
PHOENIX
Client 1
Client 2
Client 3

Step 2:
Read-Only Data Copy


Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
DATACENTER


Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
DATACENTER
CLOUD
Our API


Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
DATACENTER
CLOUD
Our API


Client 1
Lotus Notes
PHOENIX
Client 2
Client 3
DATACENTER
Our API
CLOUD

VERT.X

Kotlin

Java 13

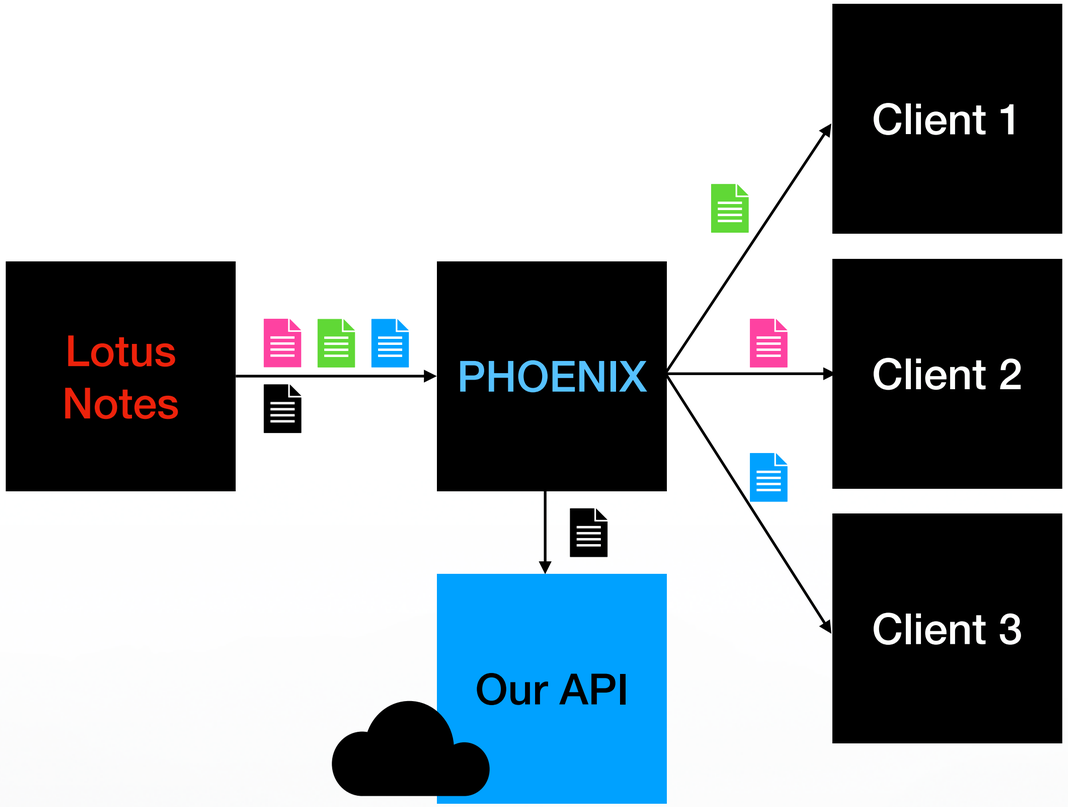
mongoDB®

aws

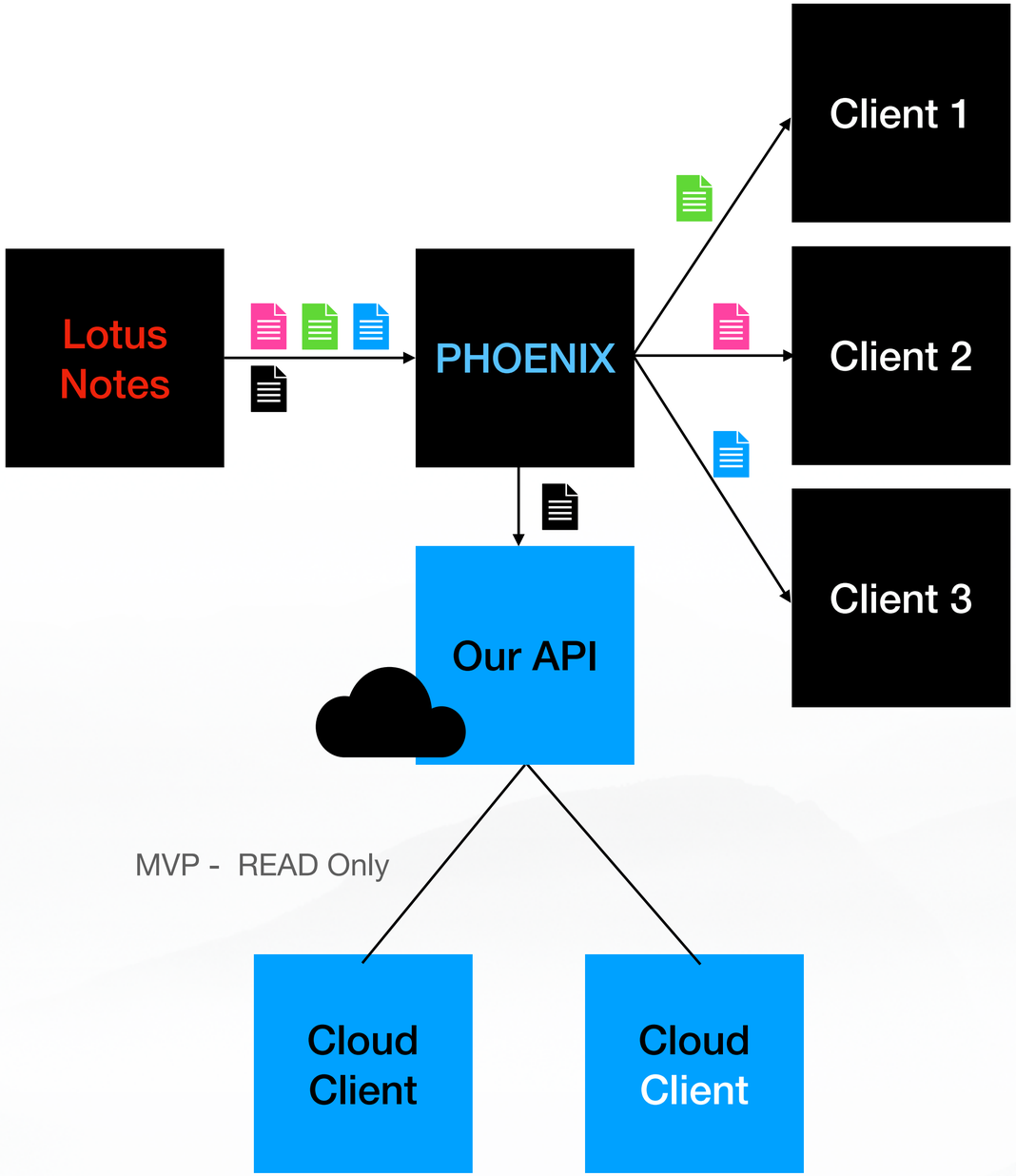
Step 3:
First users

You didn’t integrate!
I’m telling the architect!

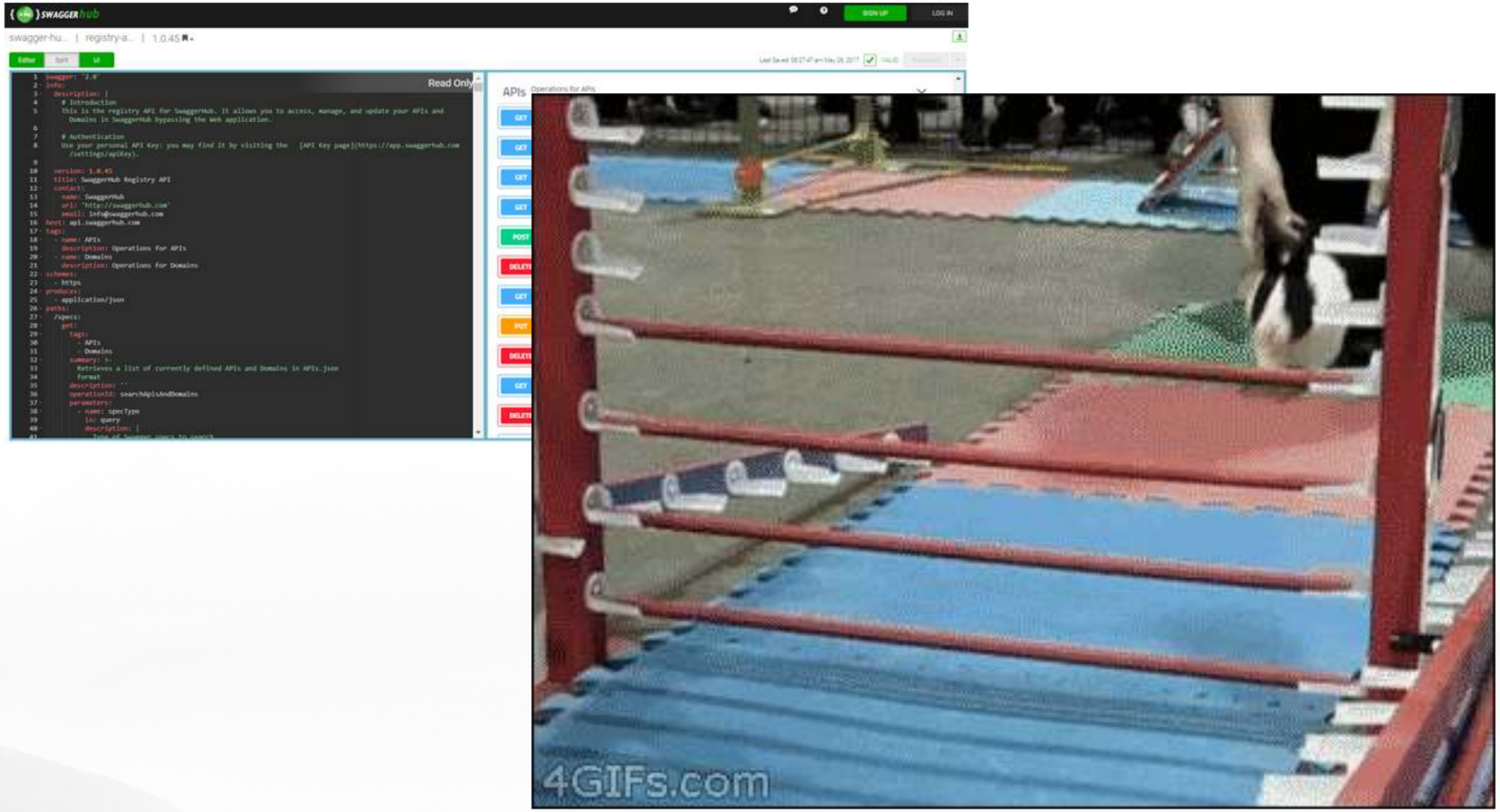
Feature Parity


Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
Our API

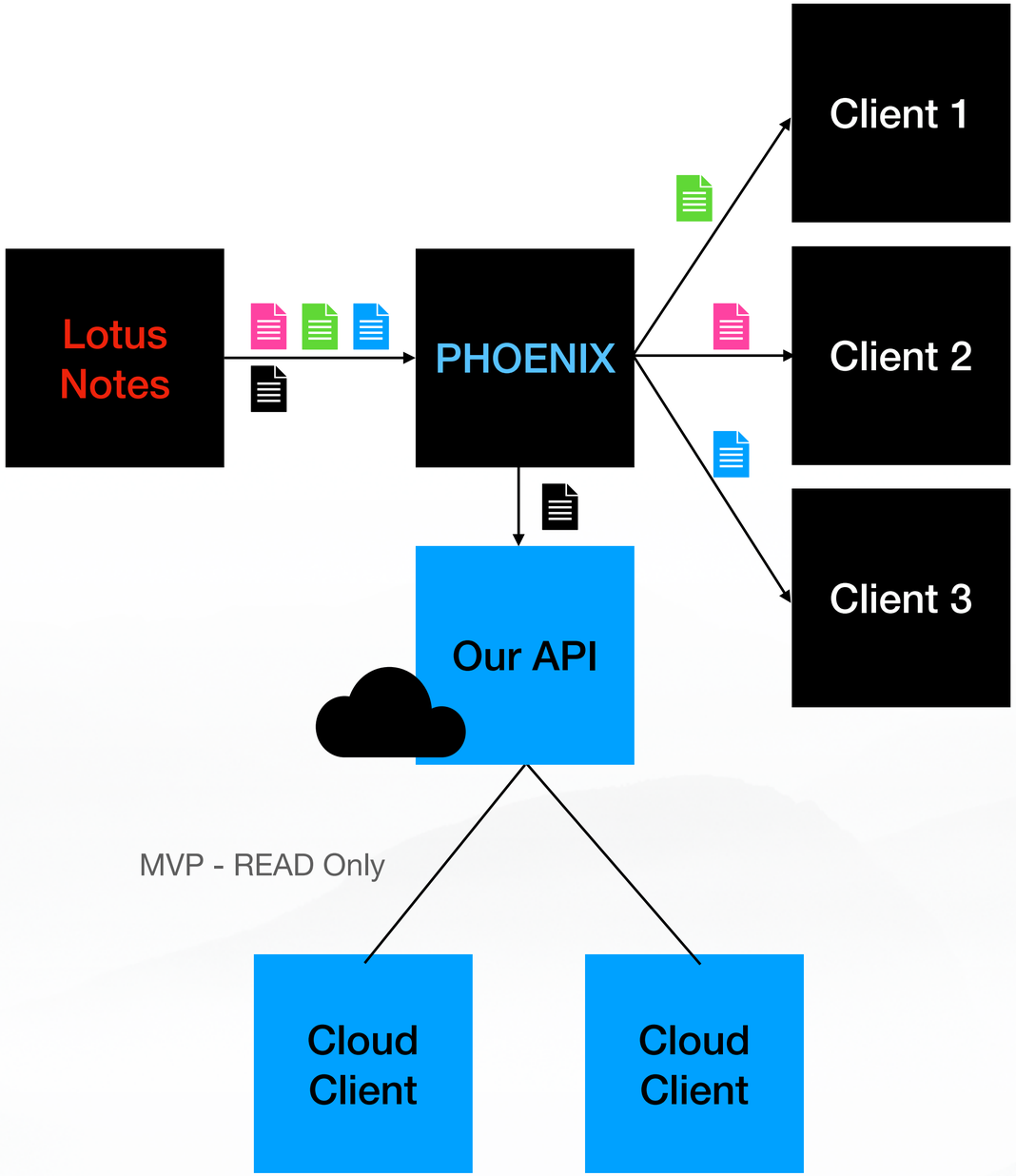
HOW LONG WOULD IT TAKE TO ADD THAT FEATURE TO THE LEGACY SYSTEM?
@ScottAdamsSays
Dilbert.com
THAT DEPENDS. WHEN WILL THE NEW SYSTEM REPLACE THE LEGACY SYSTEM?
2-22-17 © 2017 Scott Adams, Inc./Dist. by Andrews McMeel
IN SIX MONTHS.
THE NEW FEATURE WOULD TAKE SEVEN MONTHS.

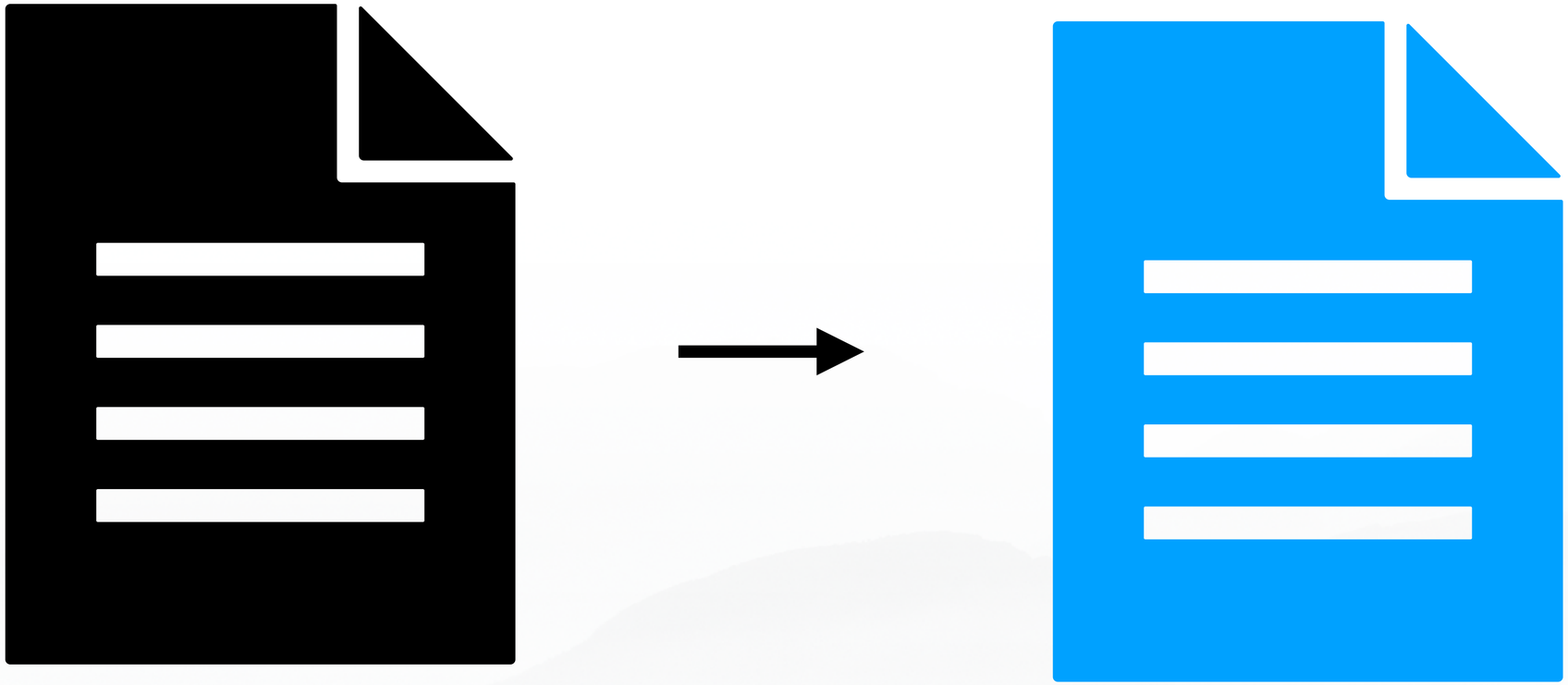

Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
Our API
MVP - READ Only
Cloud Client
Cloud Client

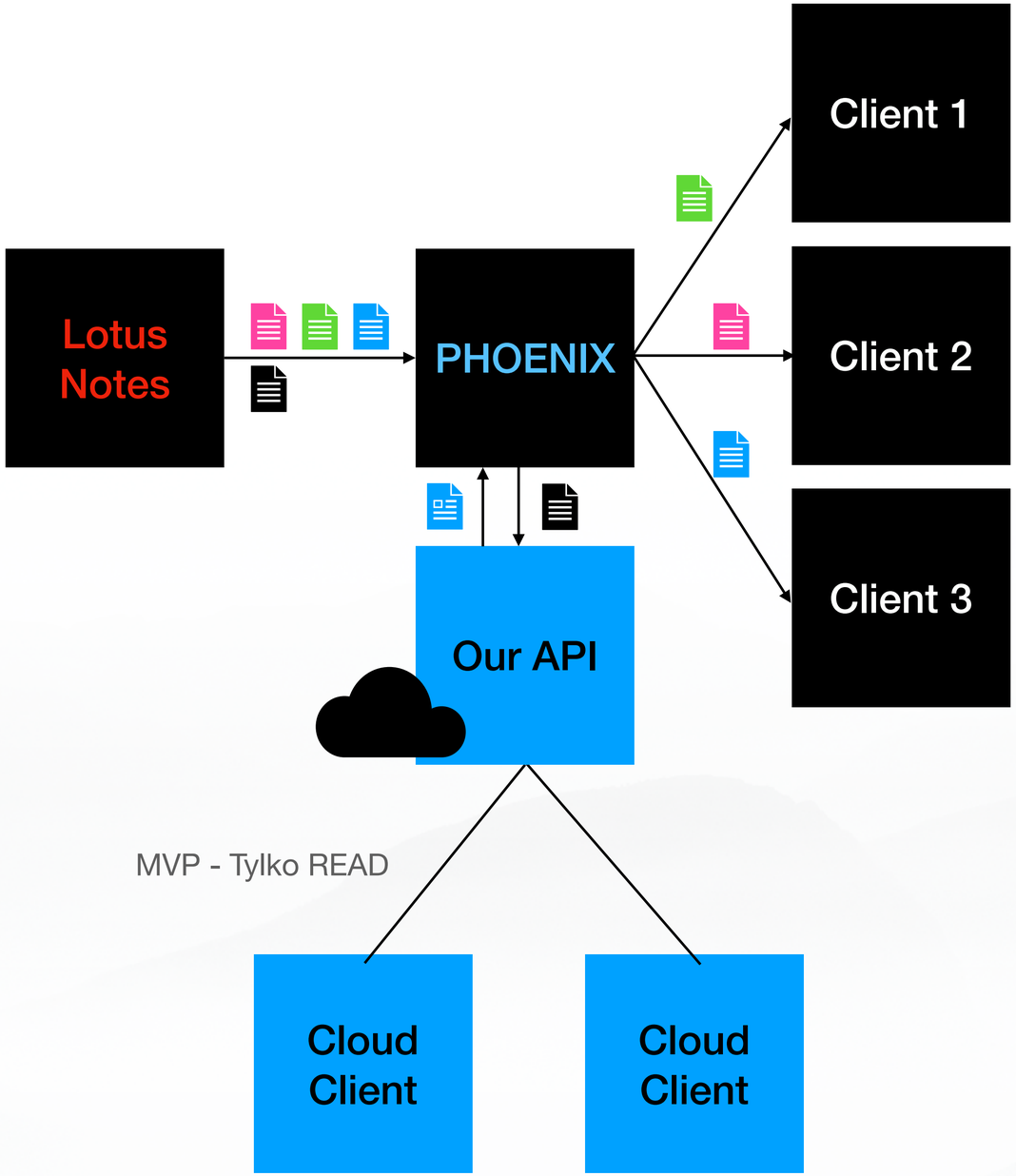
Clear documentation and good DX helps

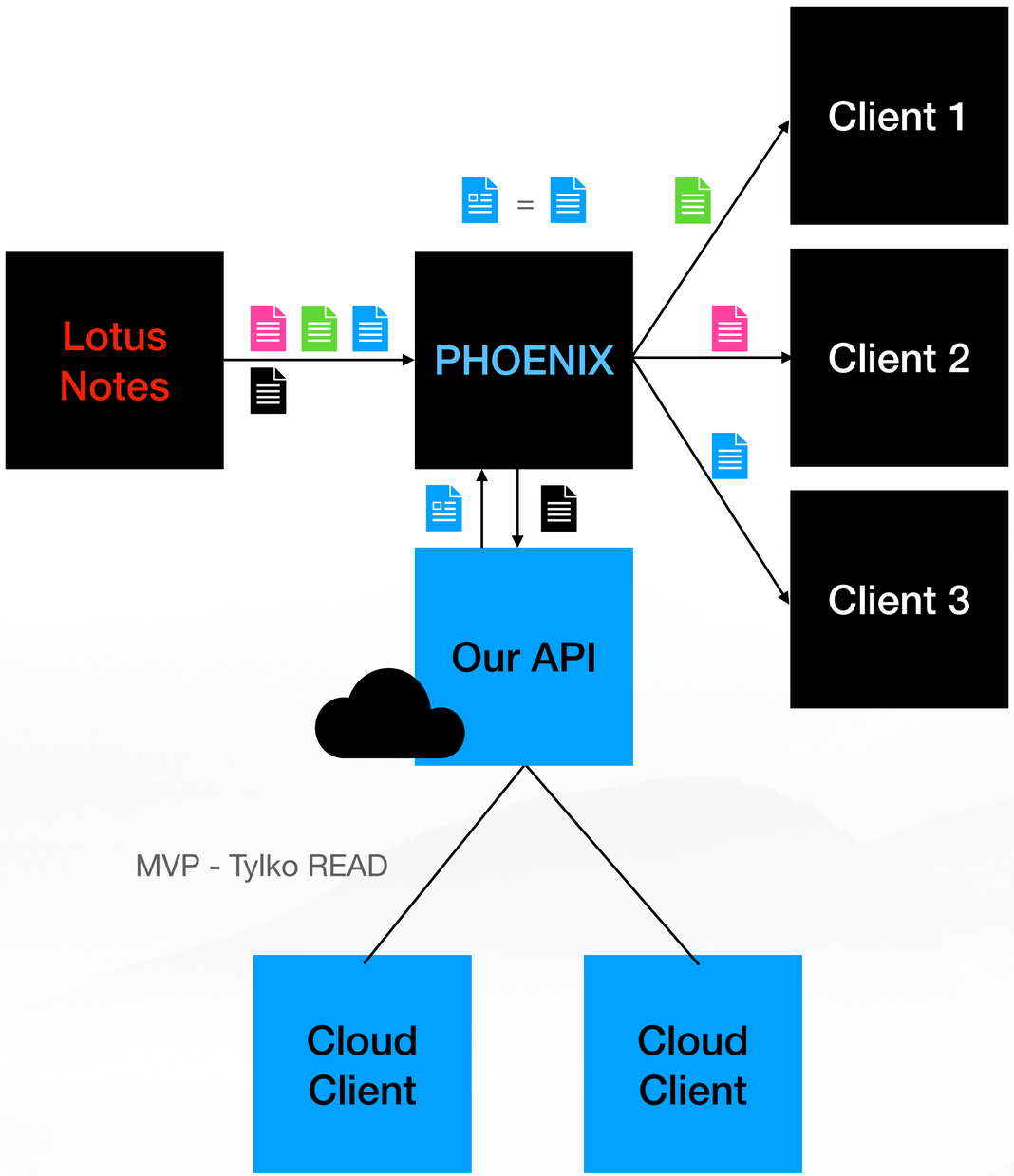


Step 4: Offline replacement of Legacy system


Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
Our API
MVP - READ Only
Cloud Client
Cloud Client




Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
Our API
MVP - Tylko READ
Cloud Client
Cloud Client


Client 1
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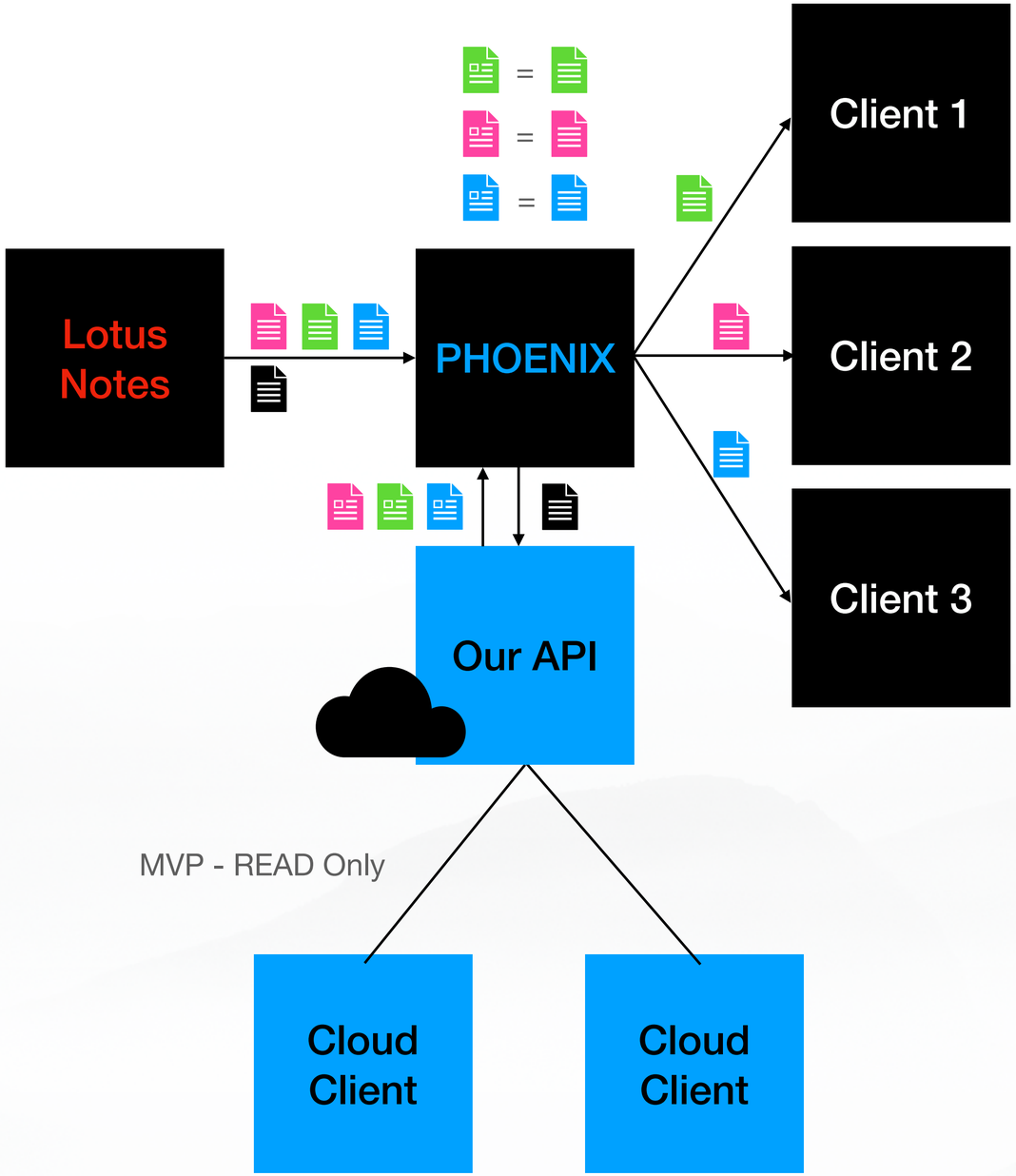
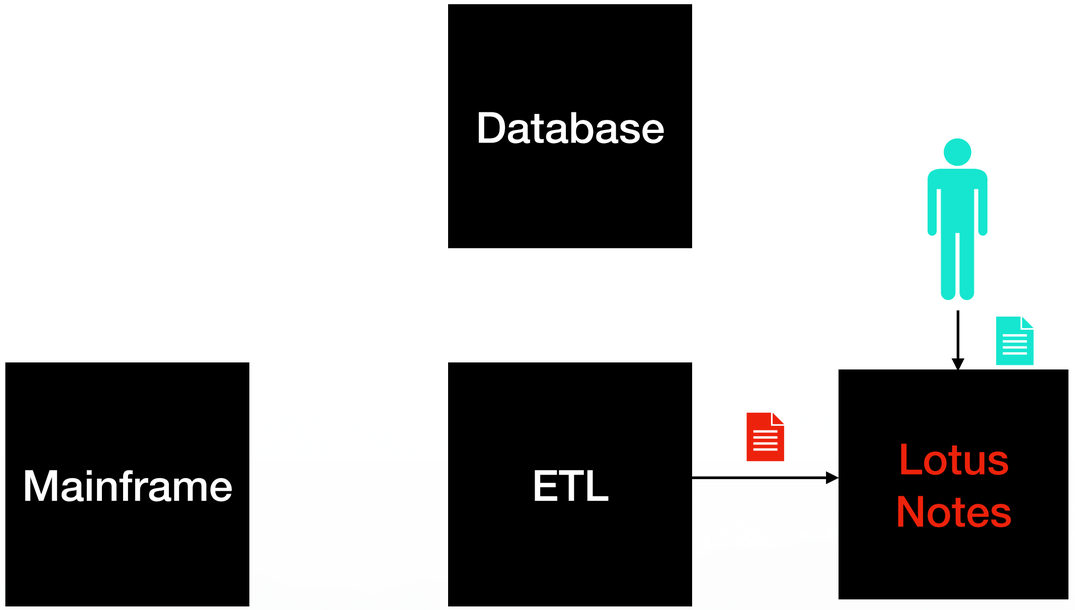
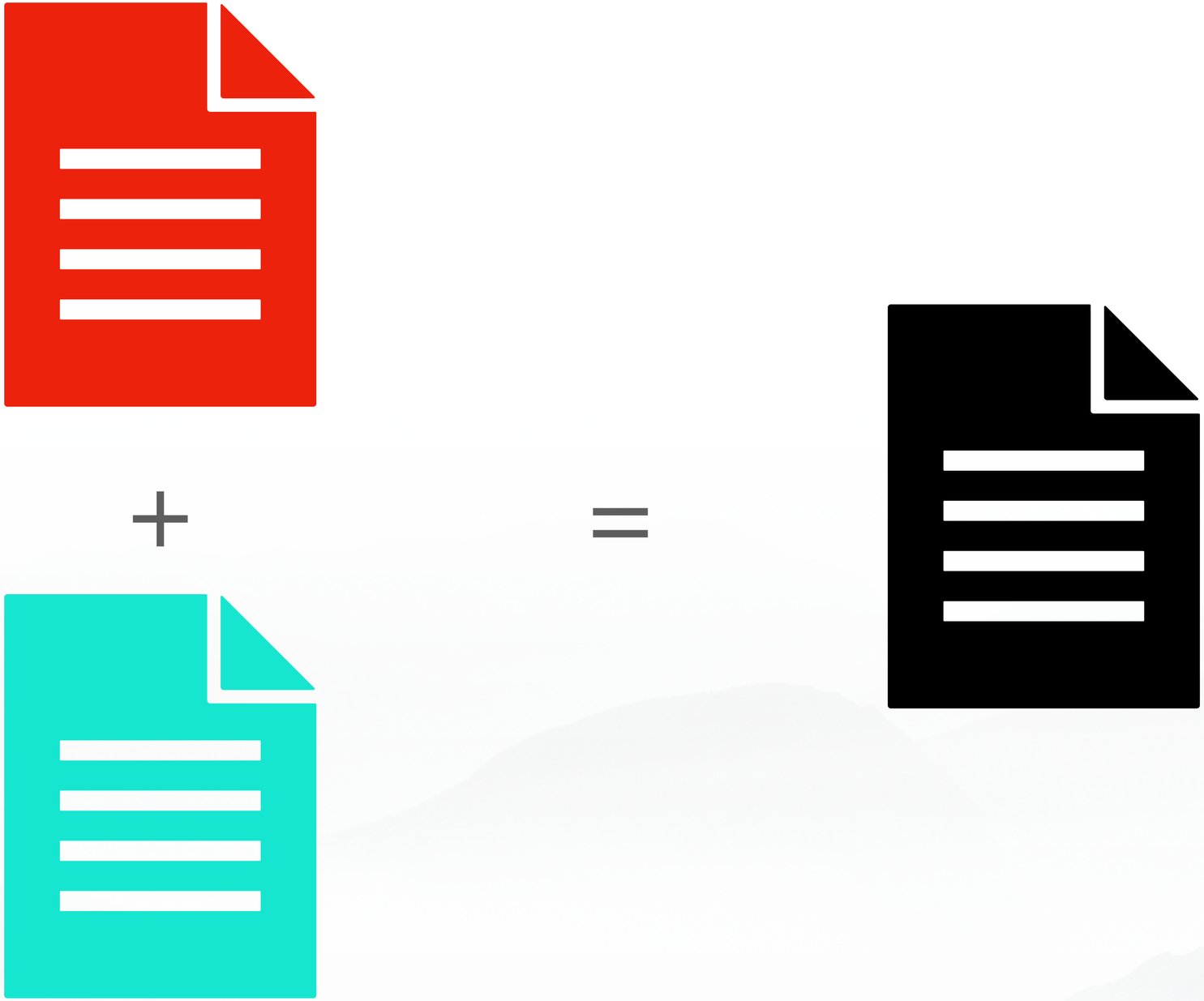
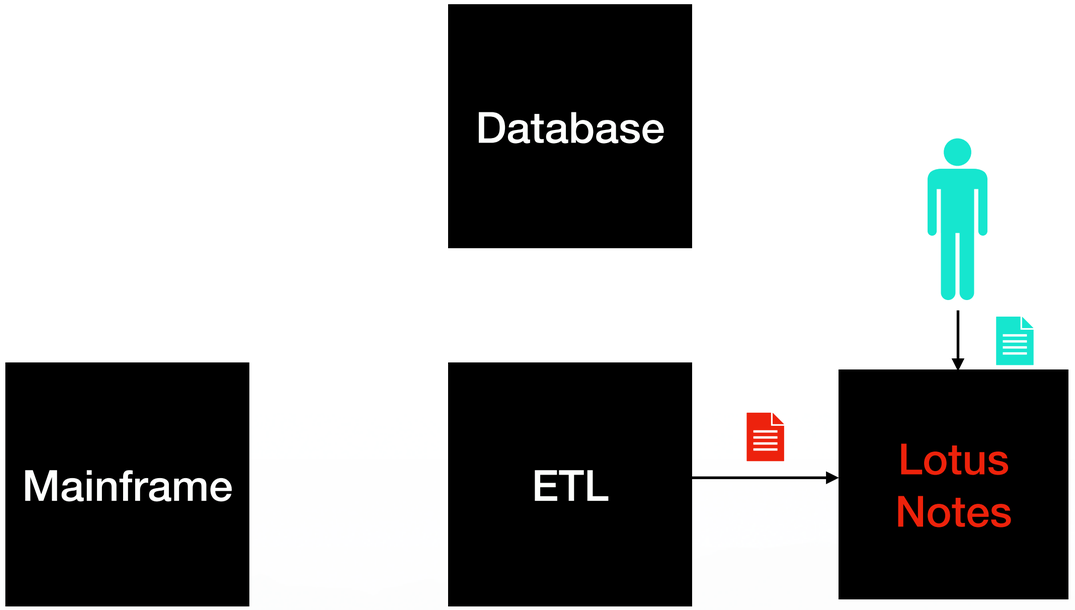
Lotus Notes
PHOENIX
Client 2
Client 3
Our API
MVP - Tylko READ
Cloud Client
Cloud Client

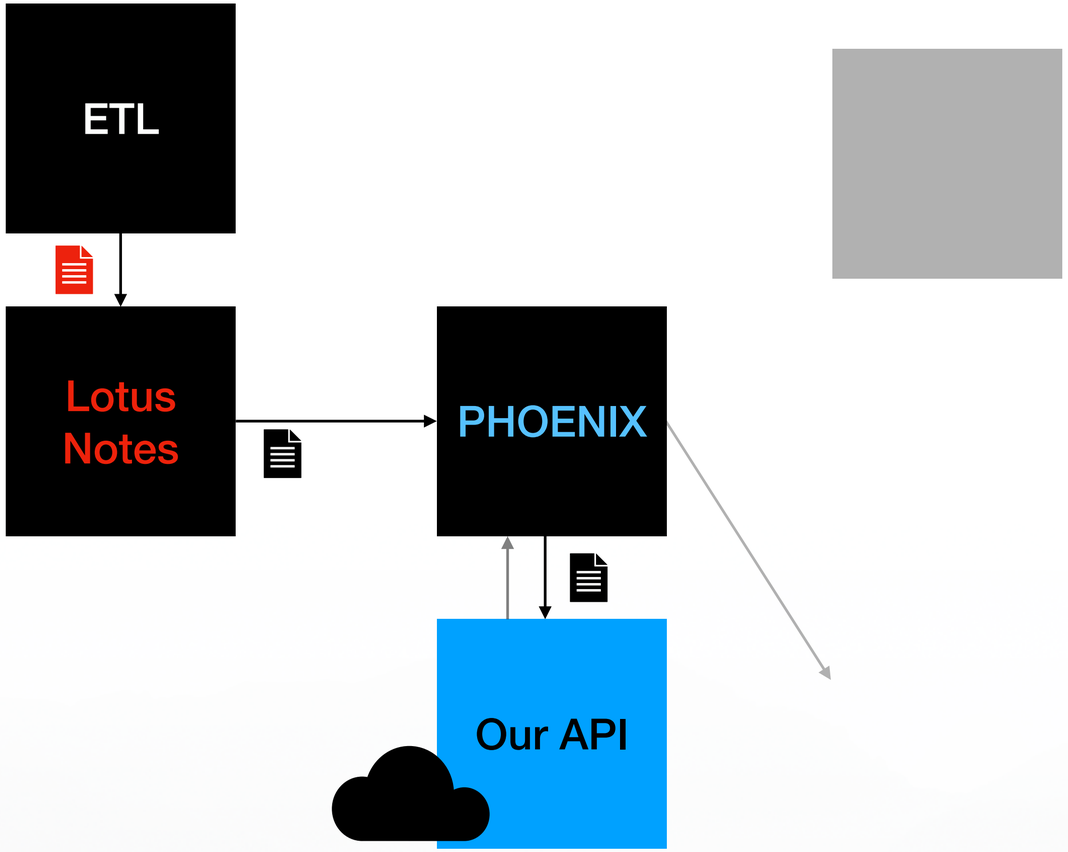

Lotus Notes
PHOENIX
Client 1
Client 2
Client 3
Our API
MVP - READ Only
Cloud Client
Cloud Client

Step 5: Cut the umbilical cord (Legacy)


Database
Mainframe
ETL
Lotus
Notes




Database
Mainframe
ETL
Lotus
Notes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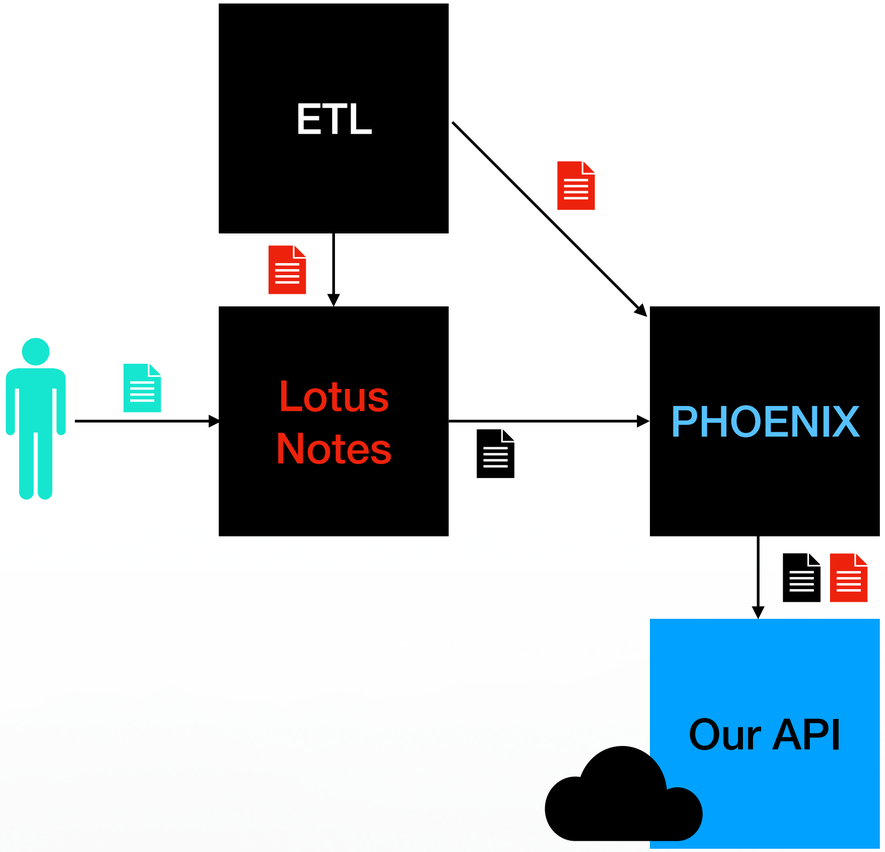
Lotus Notes
PHOENIX
Our API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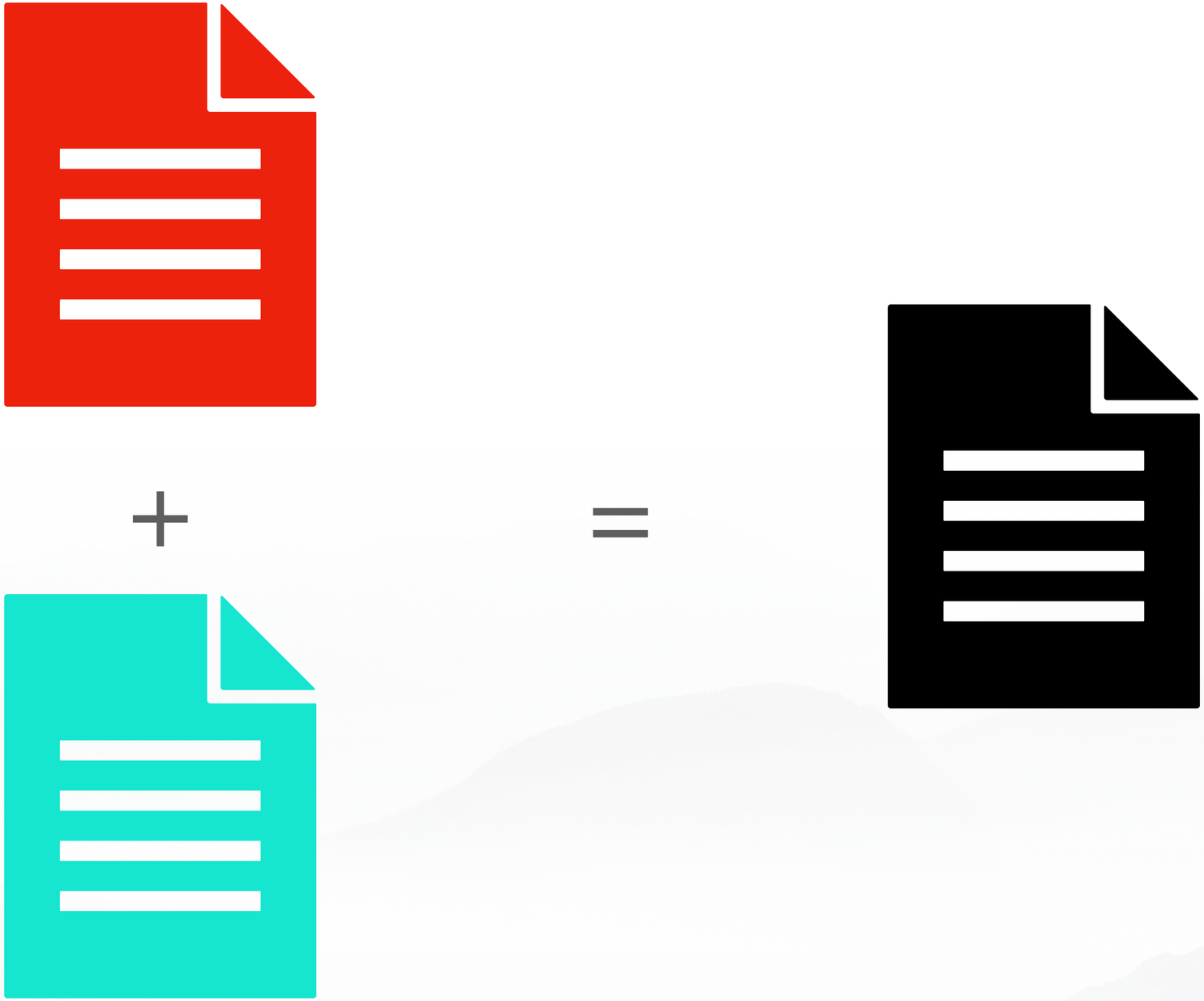
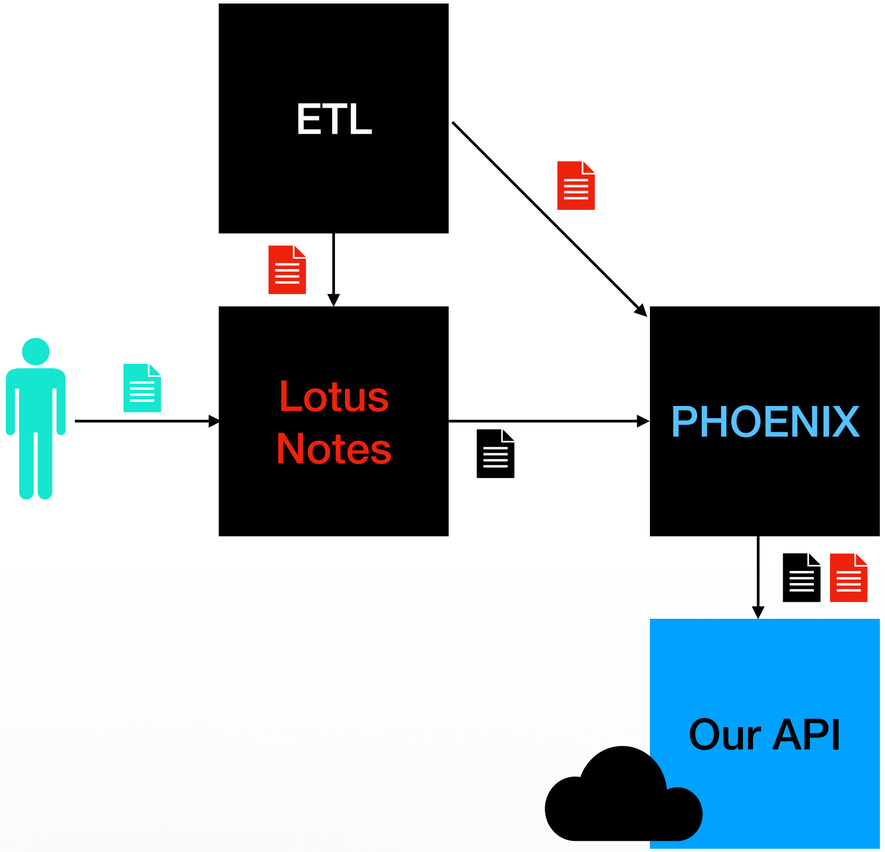
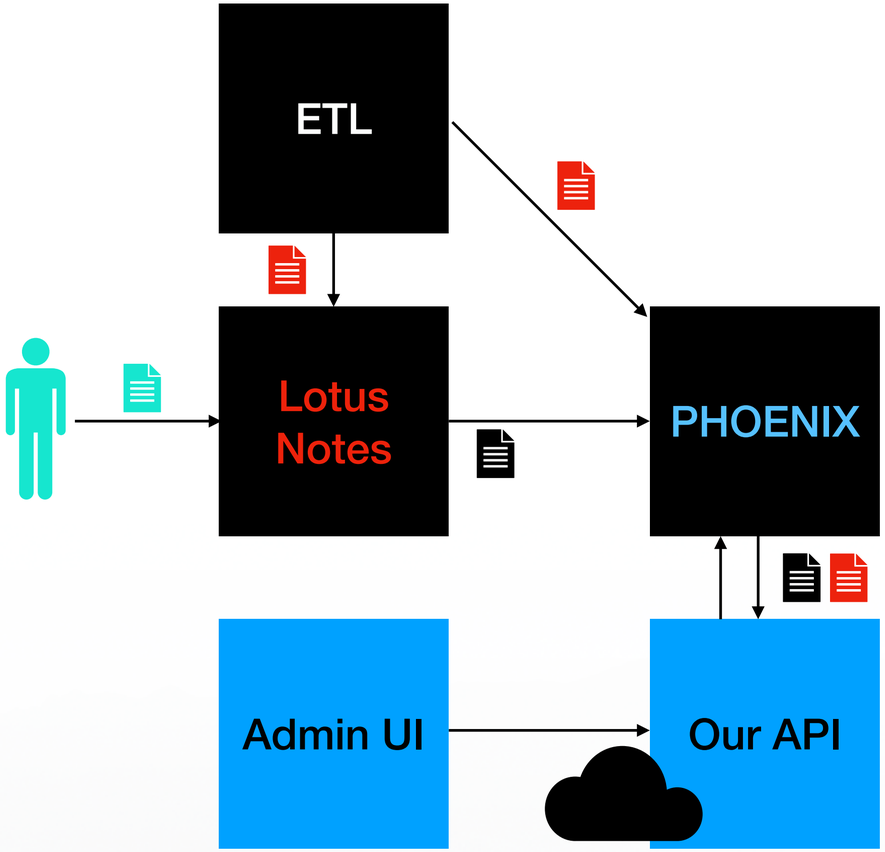
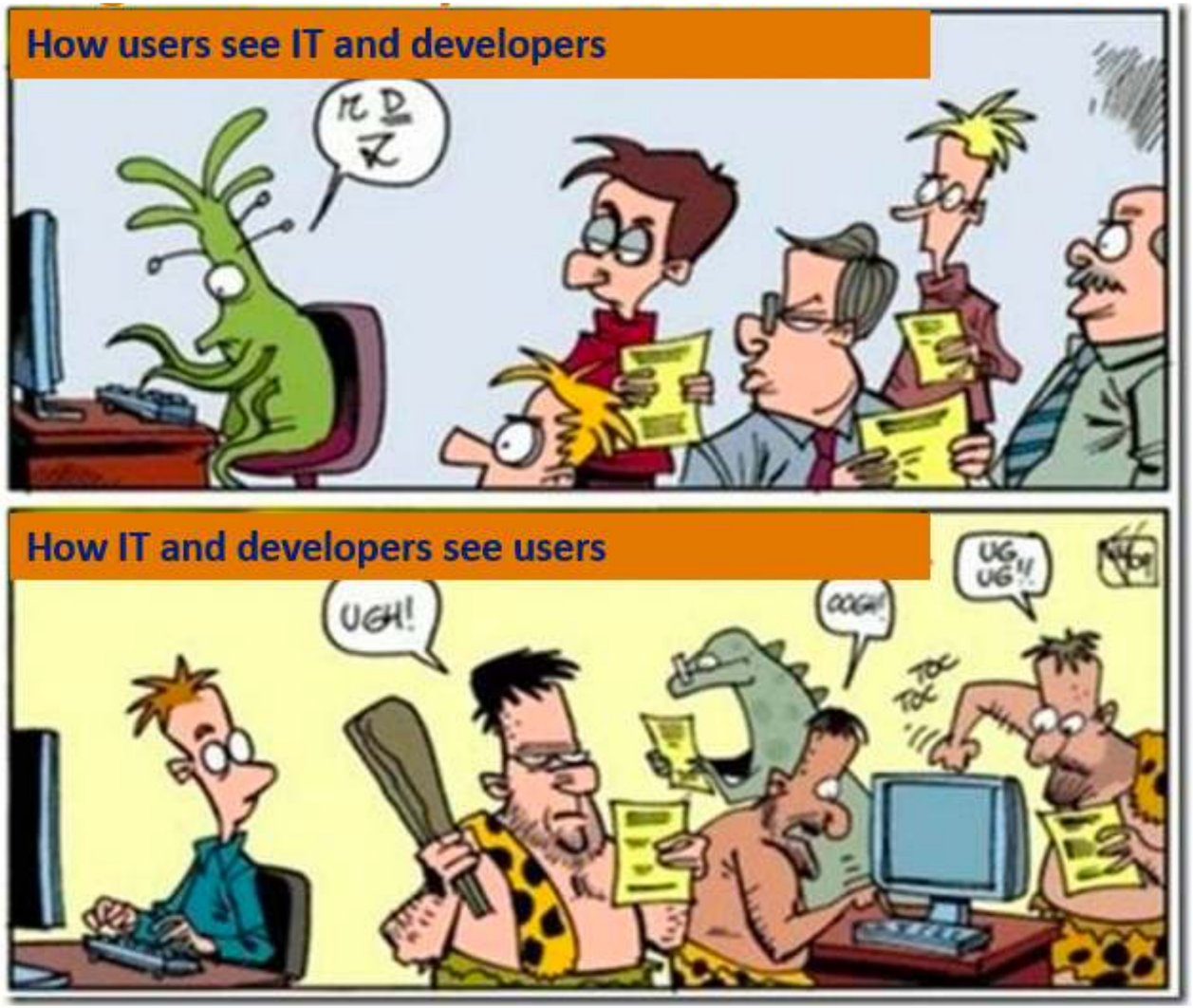
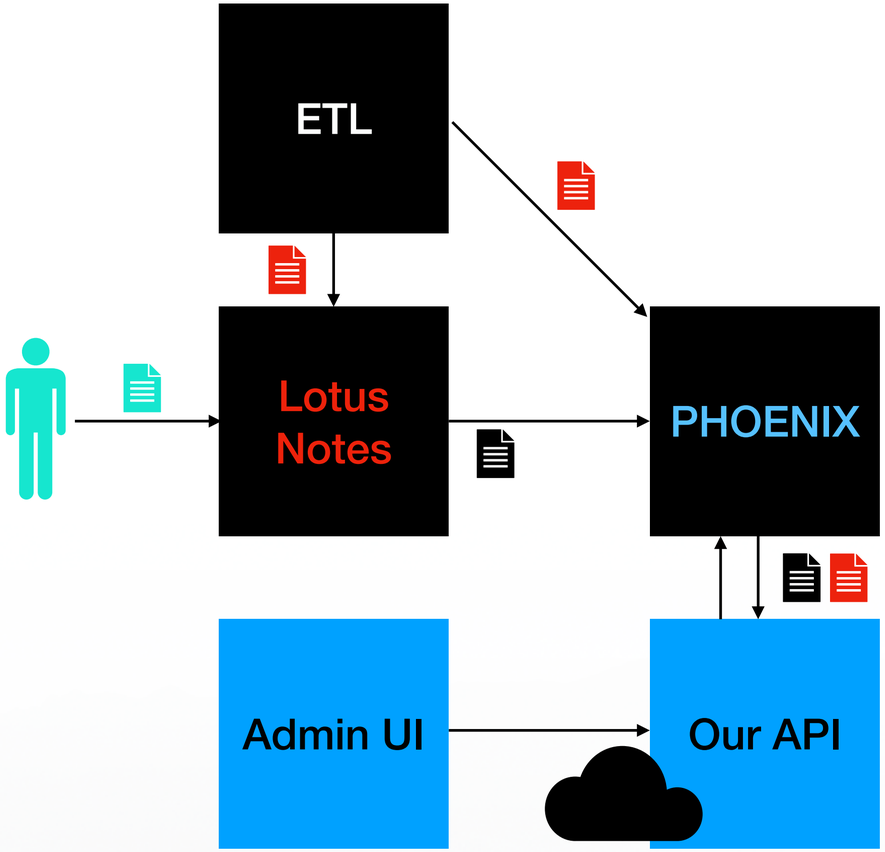
Lotus Notes
PHOENIX
Our API

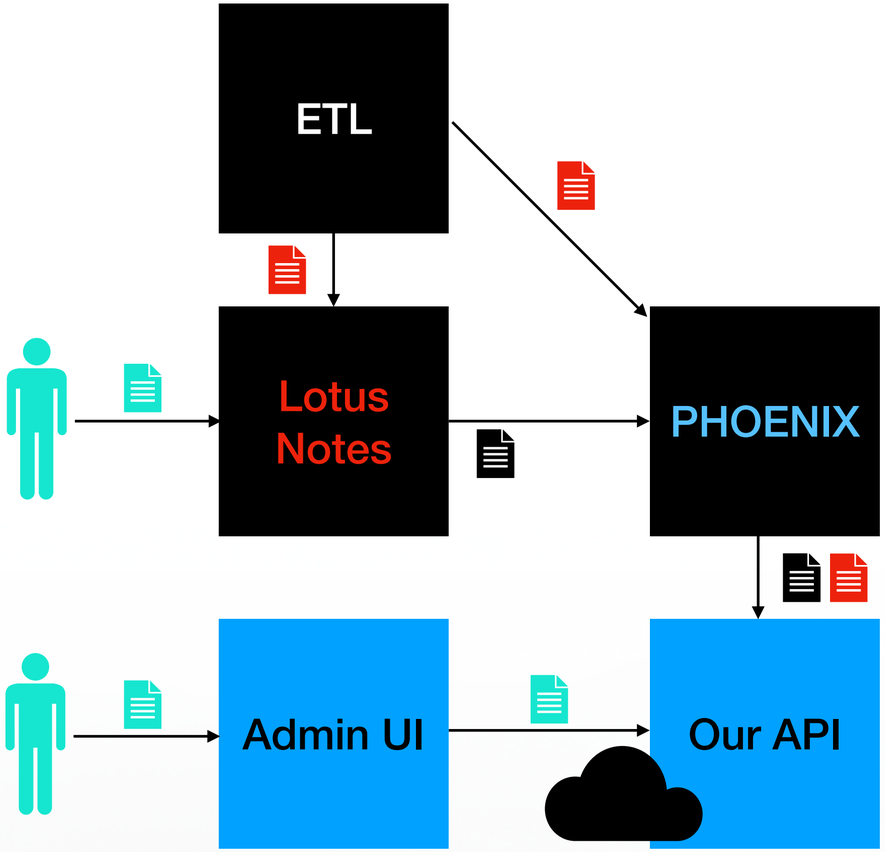



ETL
Lotus Notes
PHOENIX
Our API

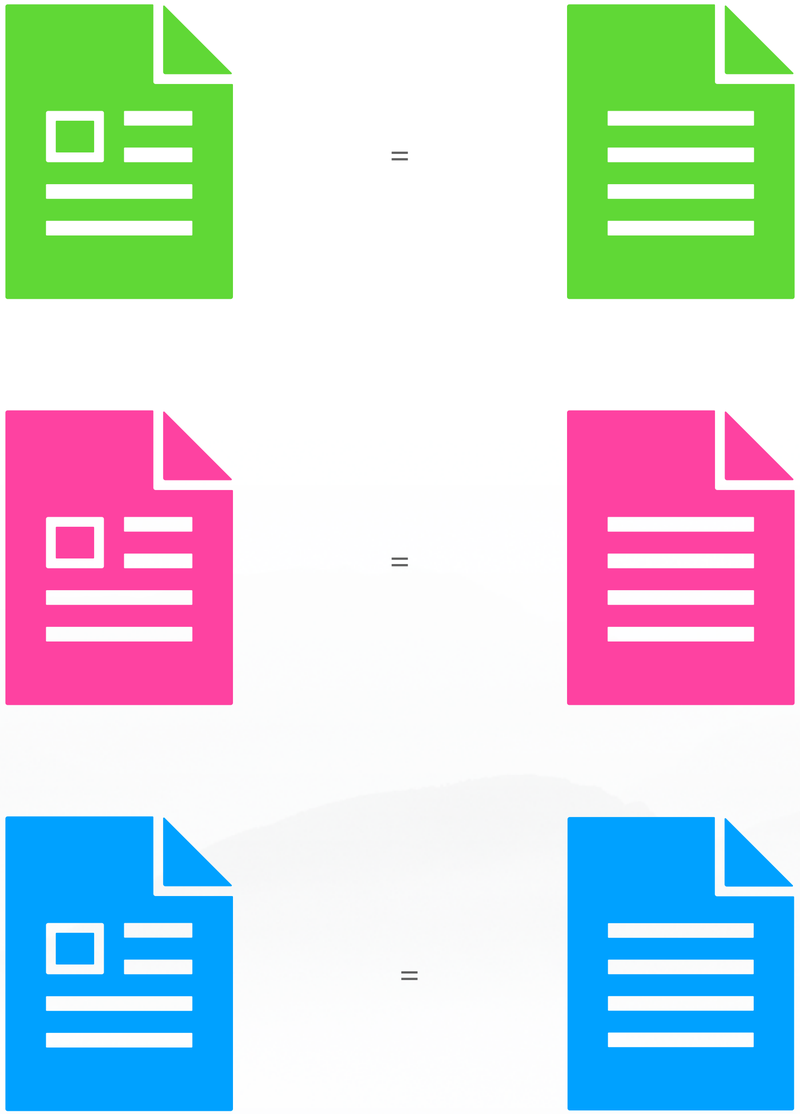

ETL
Lotus Notes
PHOENIX
Admin UI
Our API

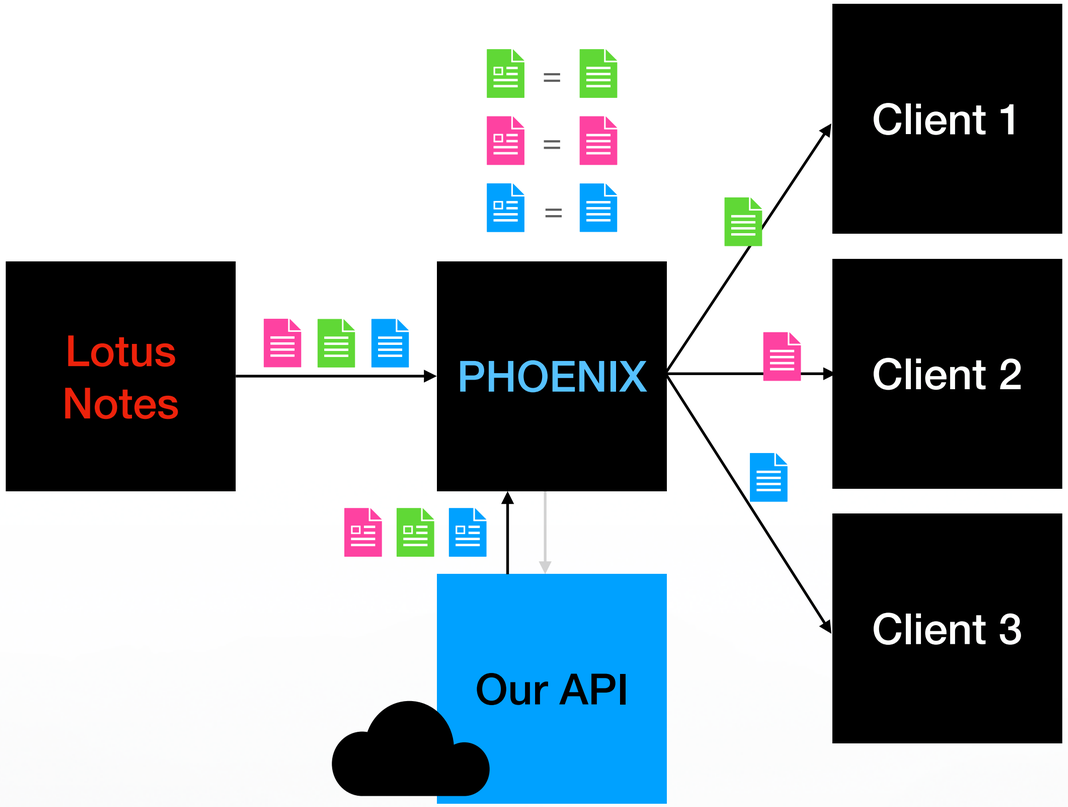

How users see IT and developers
How IT and developers see users
UGH!
UG UG!!

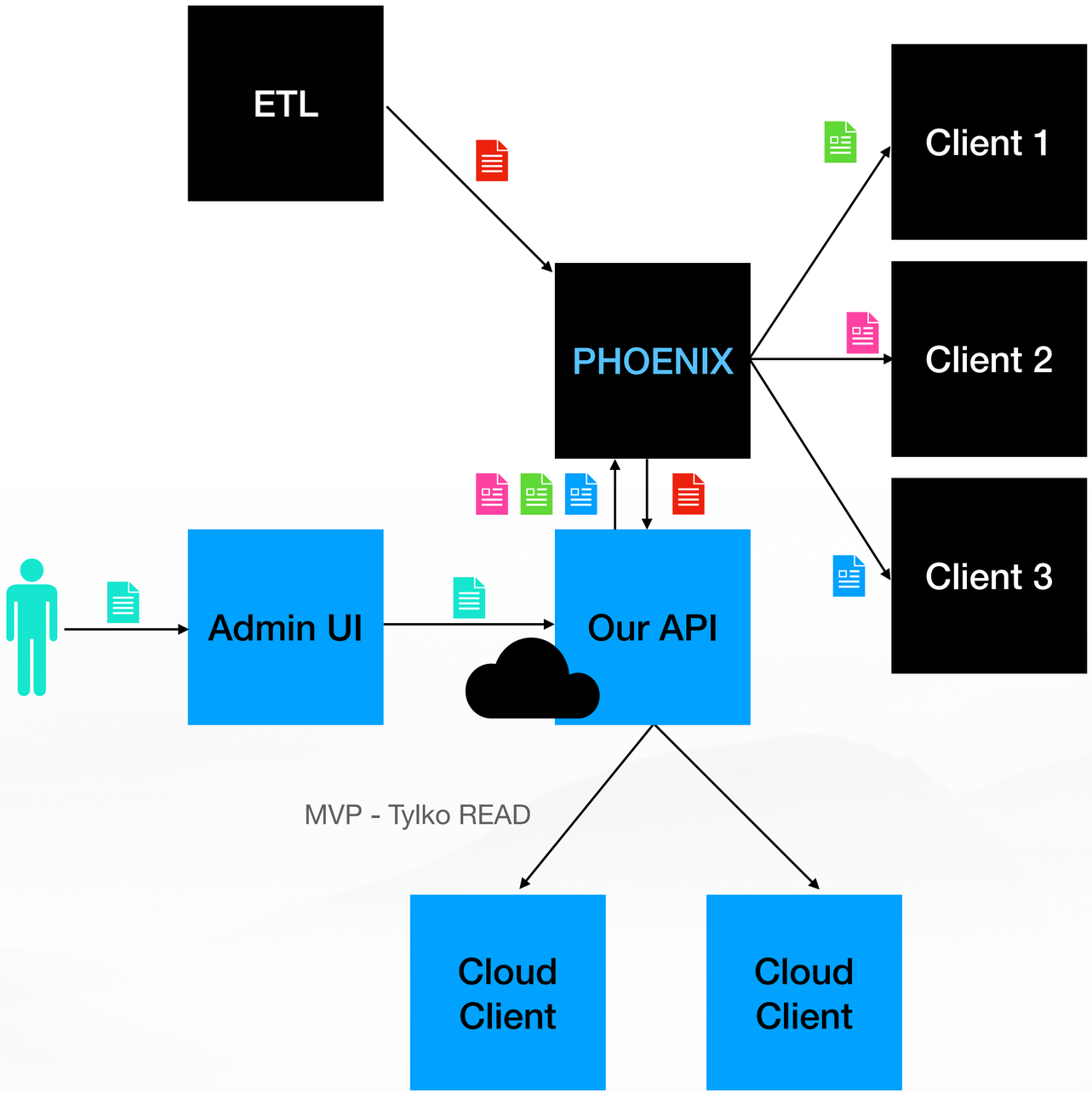

ETL
Lotus Notes
PHOENIX
Admin UI
Our API

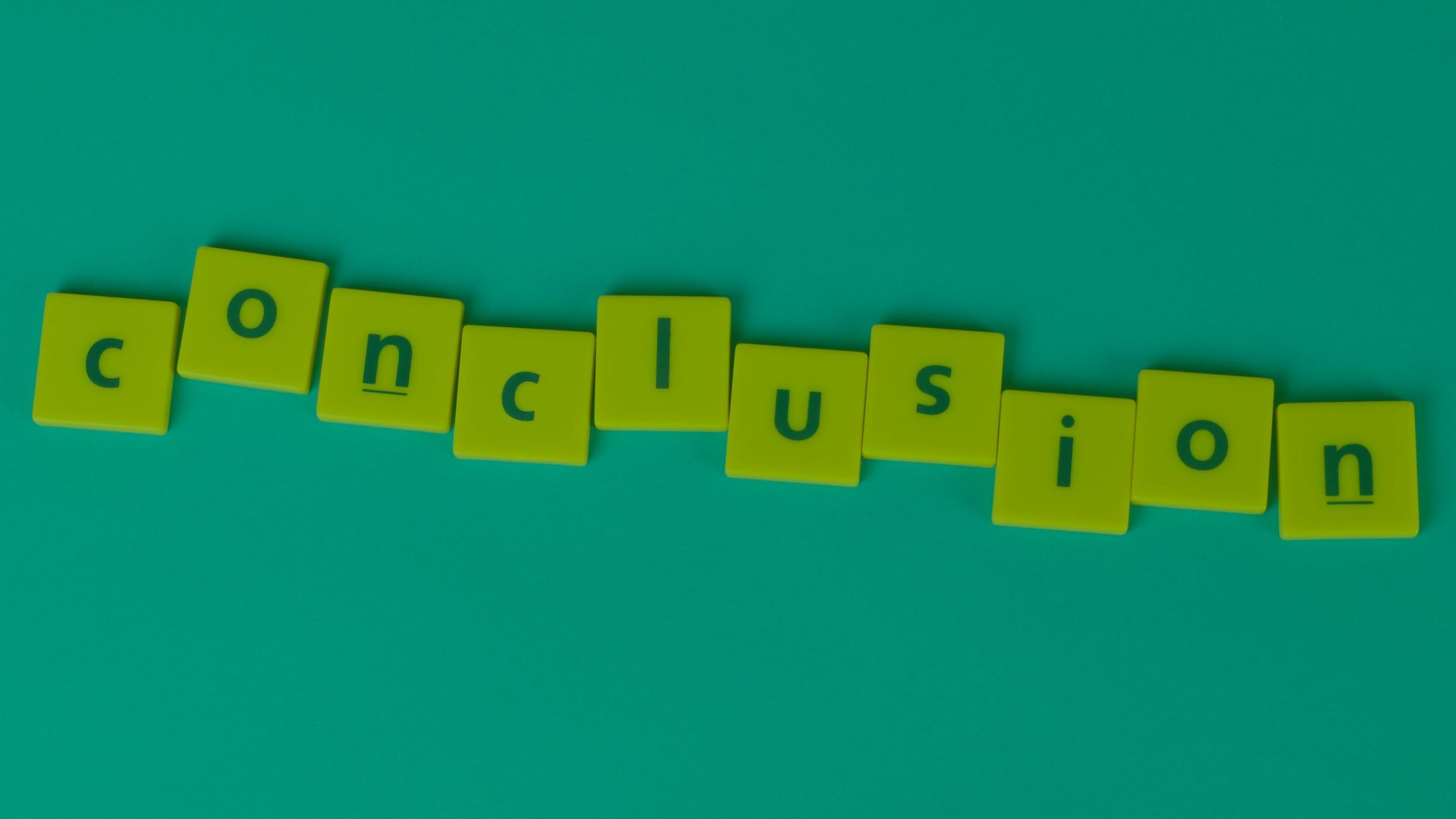

ETL
Lotus Notes
PHOENIX
Admin UI
Our API

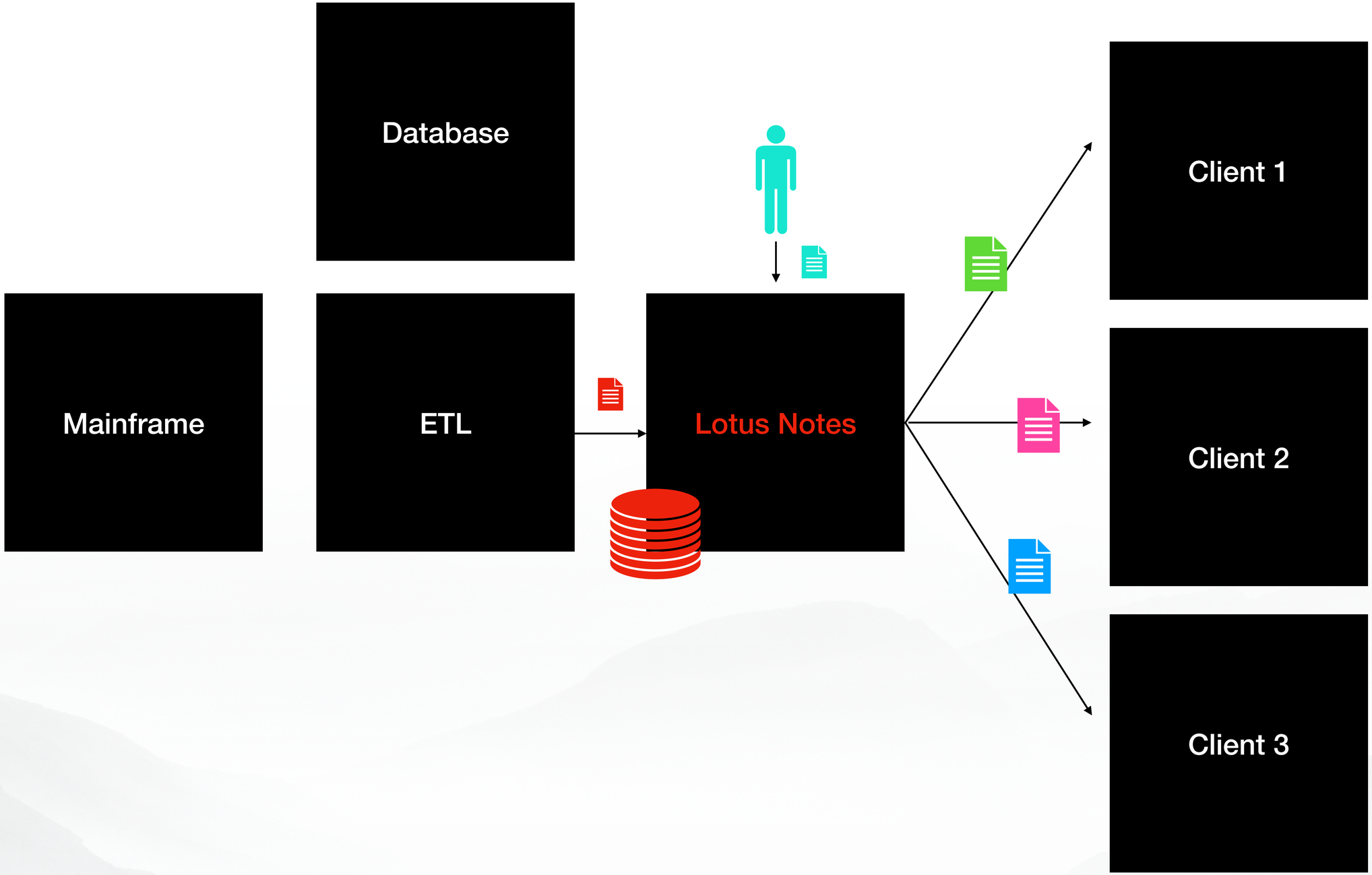
Step 7: Online replacement of Legacy system

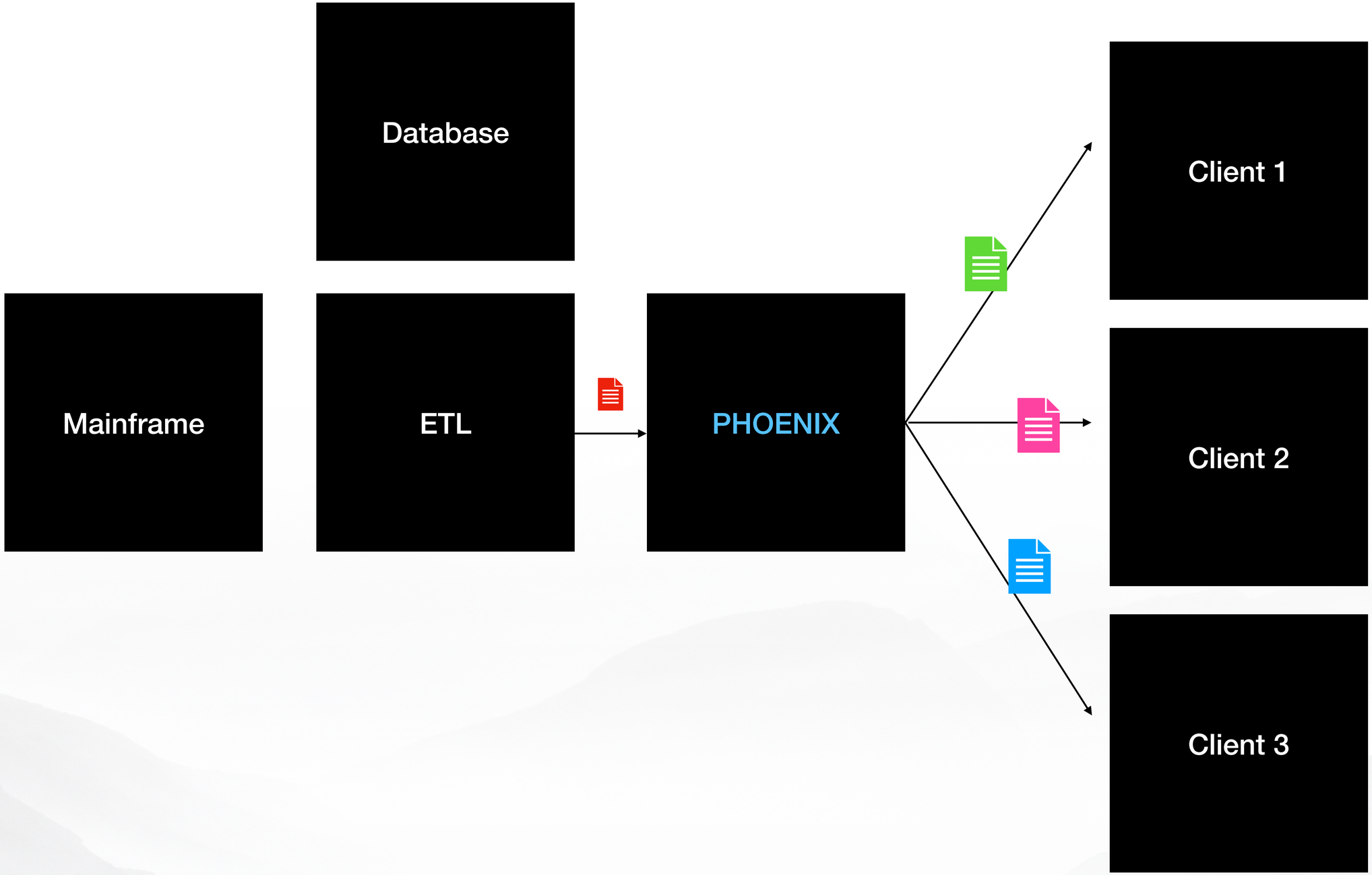



Lotus Notes
PHOENIX
Our API
Client 1
Client 2
Client 3


ETL
PHOENIX
Client 1
Client 2
Client 3
Admin UI
Our API
MVP - Tylko READ
Cloud Client
Cloud Client


conclusion


Database
Mainframe
ETL
Lotus Notes
Client 1
Client 2
Client 3

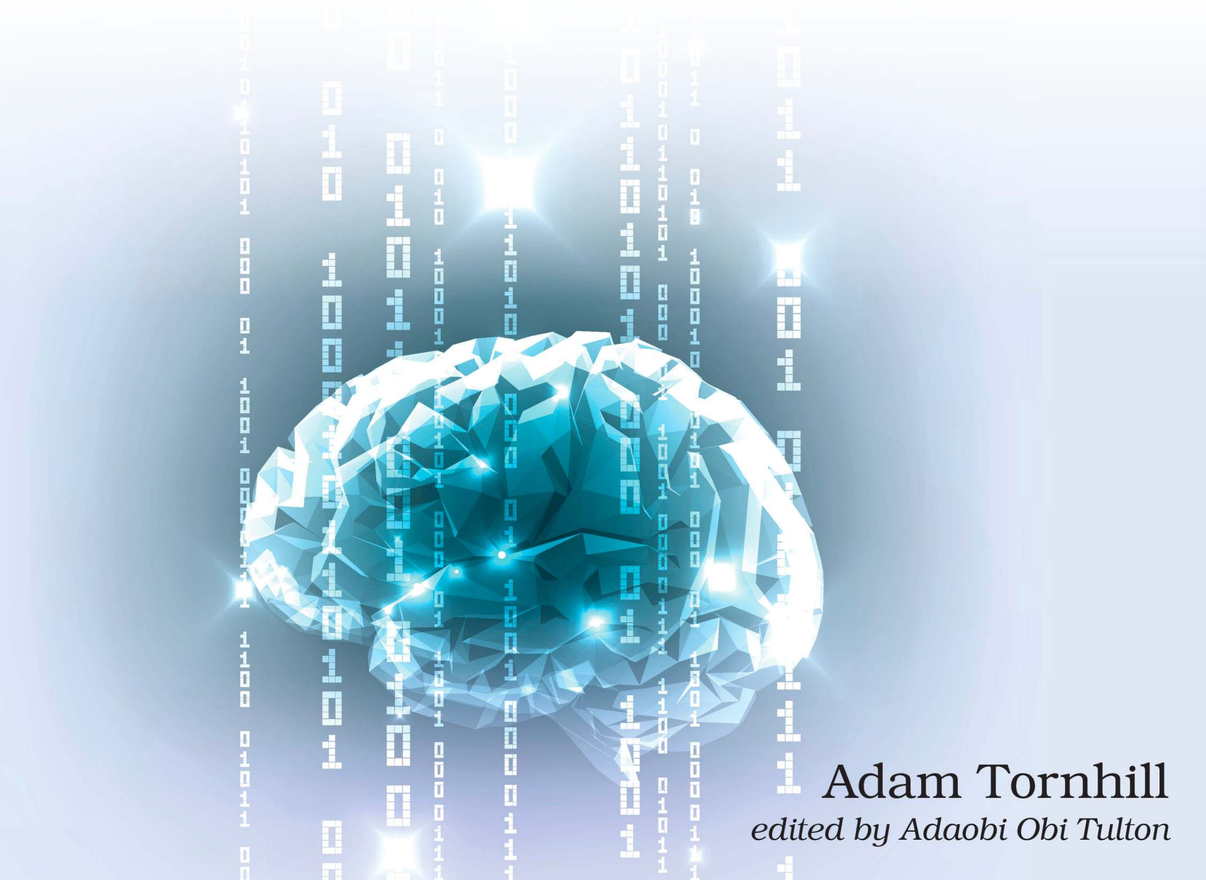

Database
Mainframe
ETL
PHOENIX
Client 1
Client 2
Client 3

Legacy is still there, but it hurts less

The Pragmatic Programmers

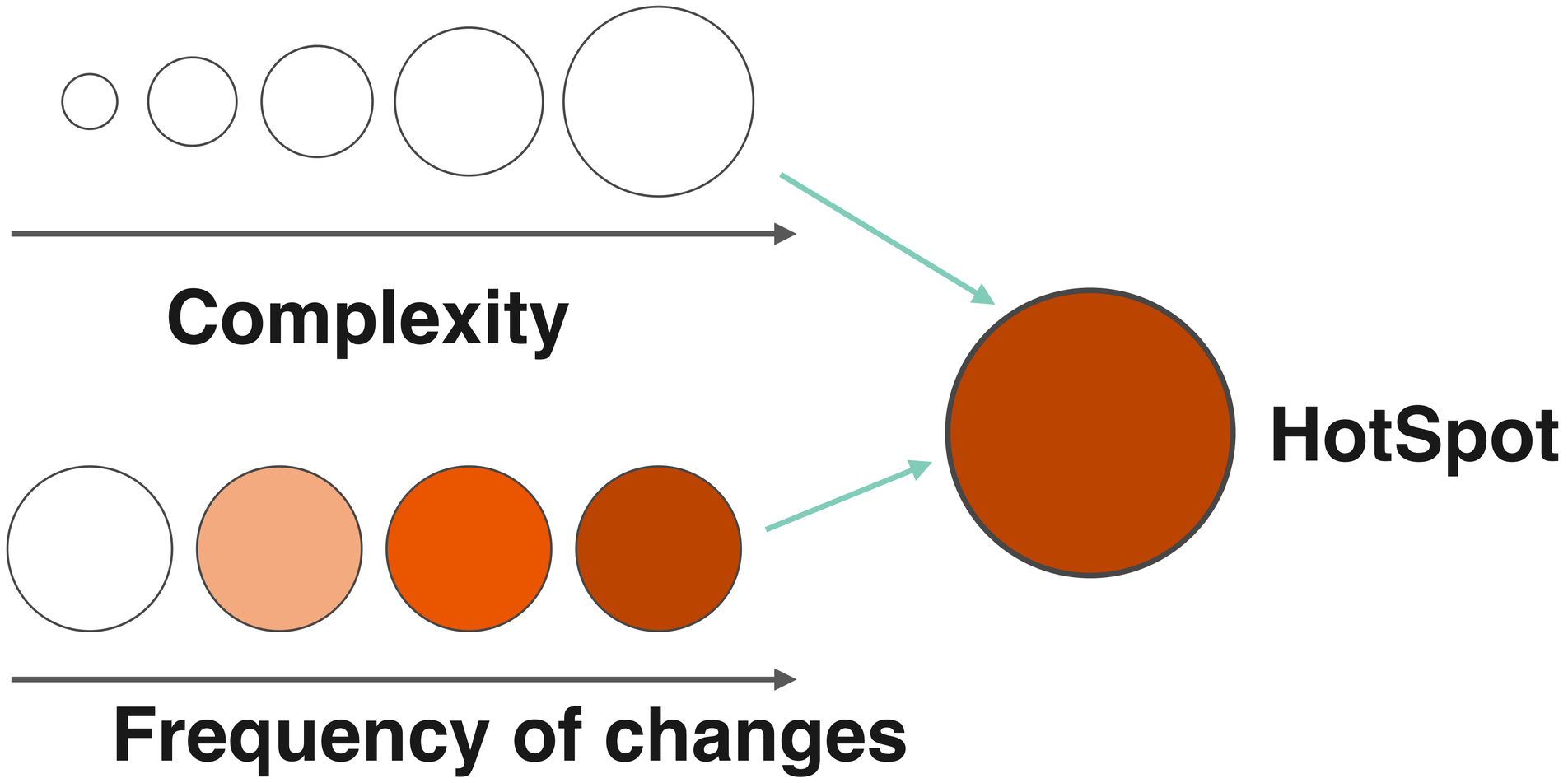
Software Design X-Rays

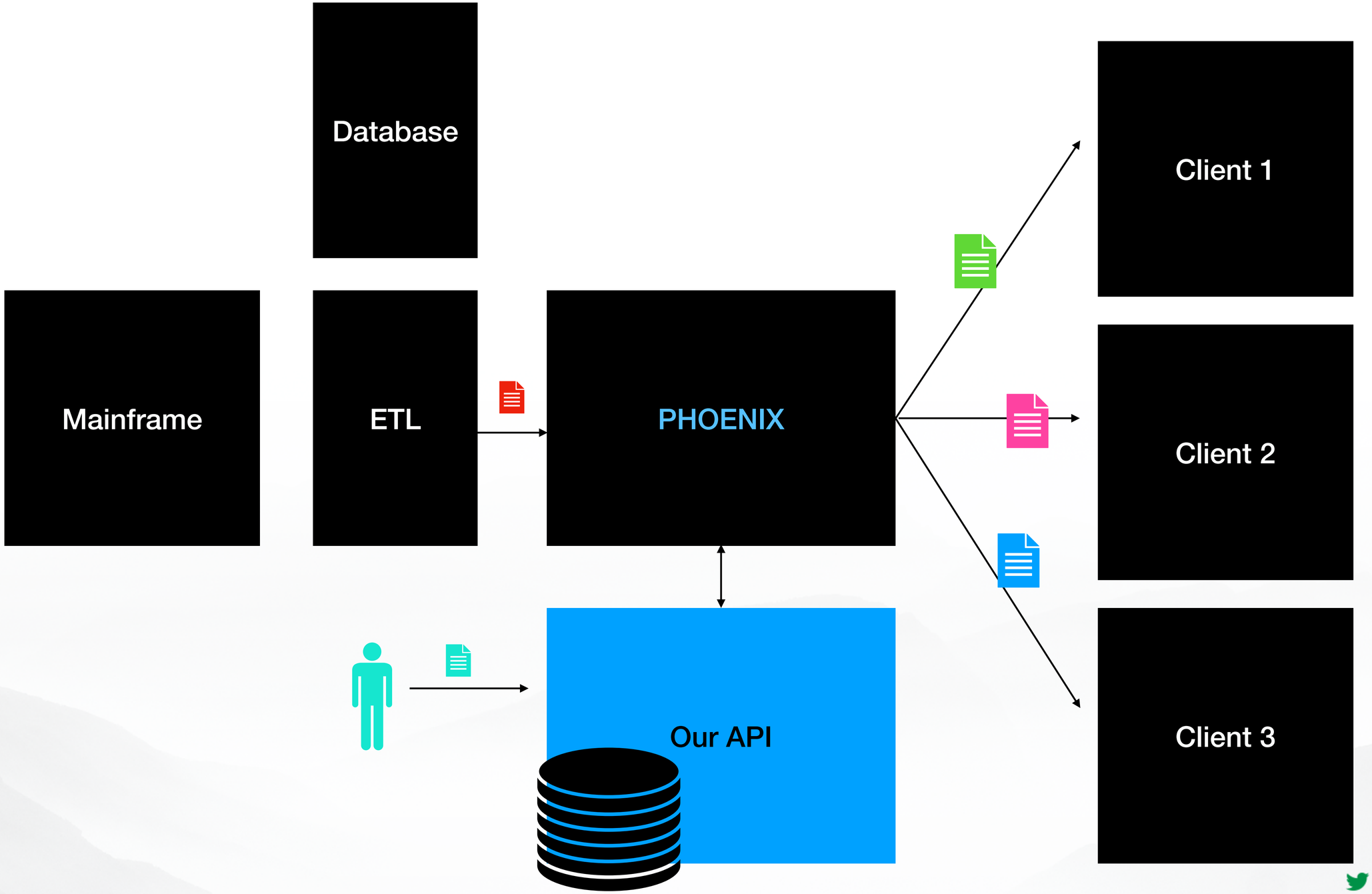
Fix Technical Debt with Behavioral Code Analysis

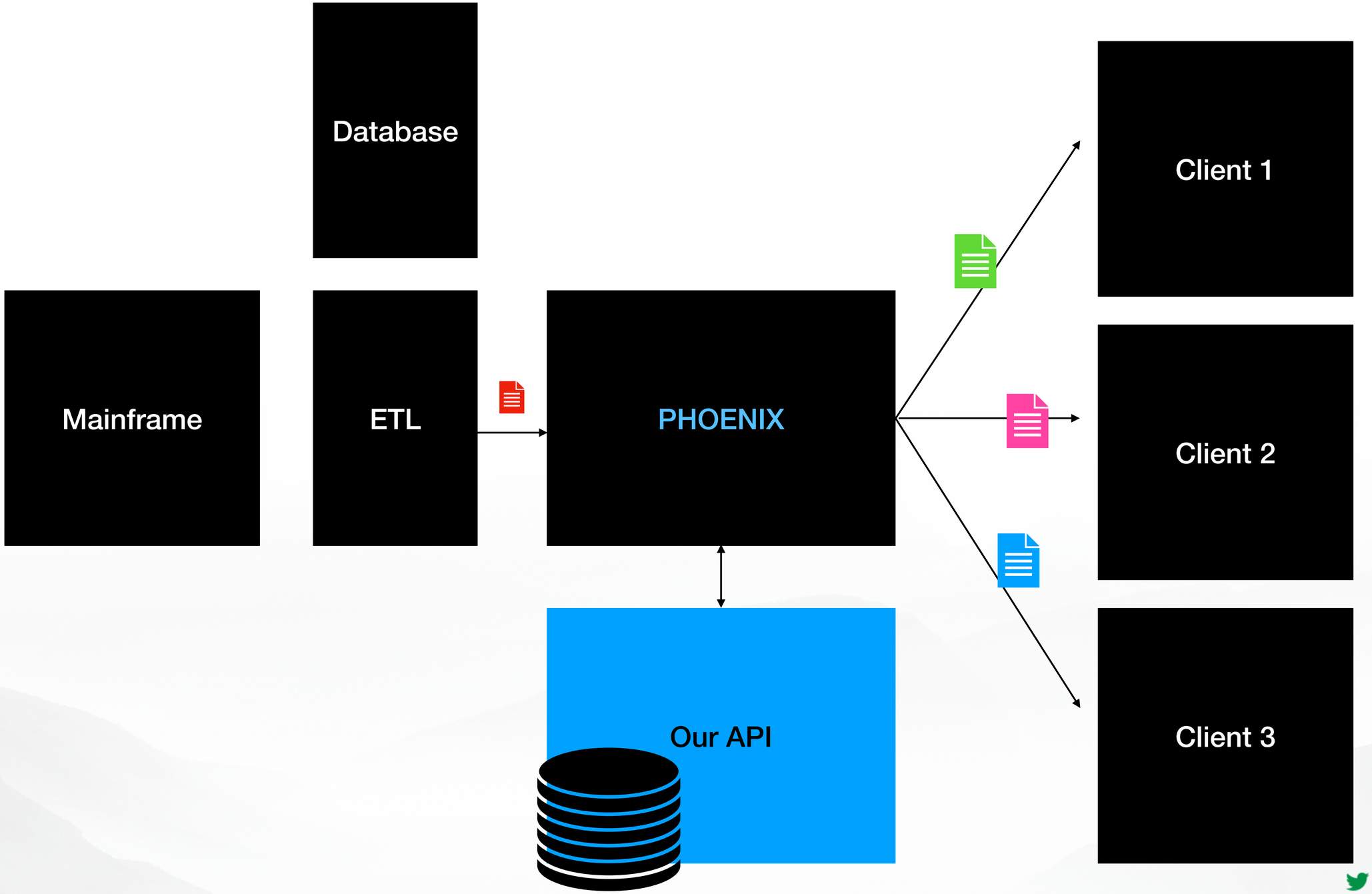


Adam Tornhill

edited by Adaobi Obi Tulton


Complexity
Frequency of changes
HotSpot


Database
Mainframe
ETL
PHOENIX
Client 1
Client 2
Client 3
Our API


Database
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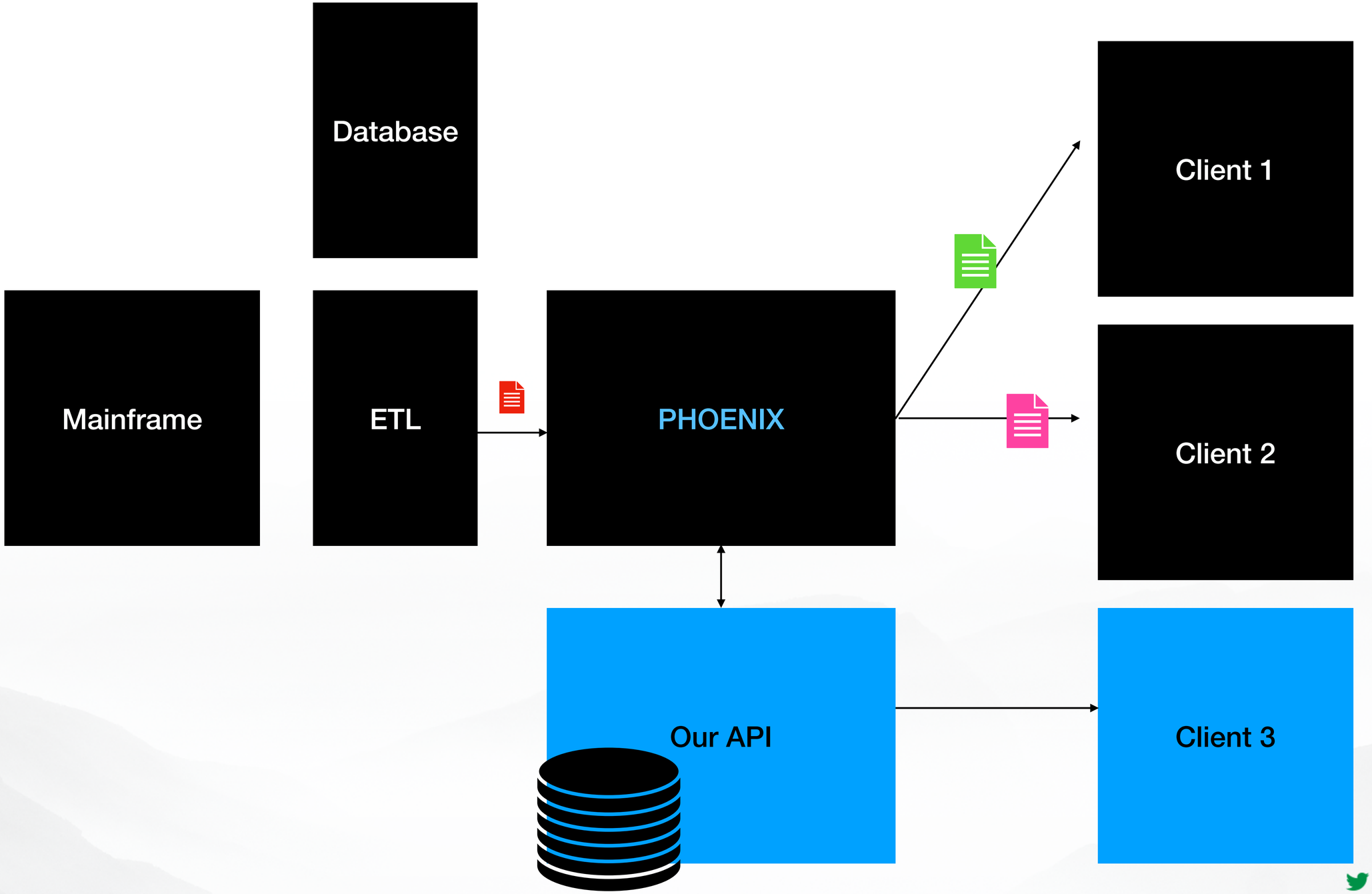
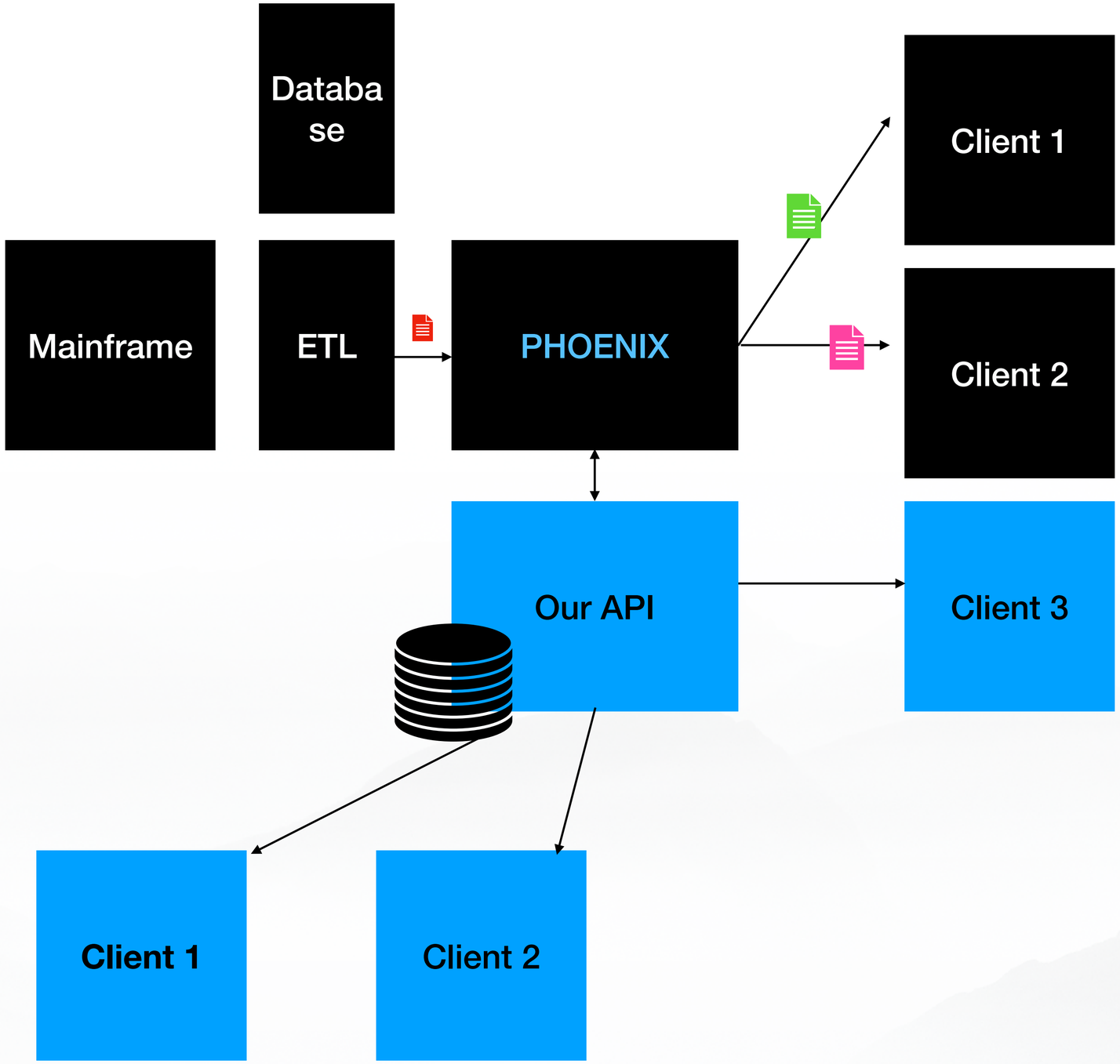
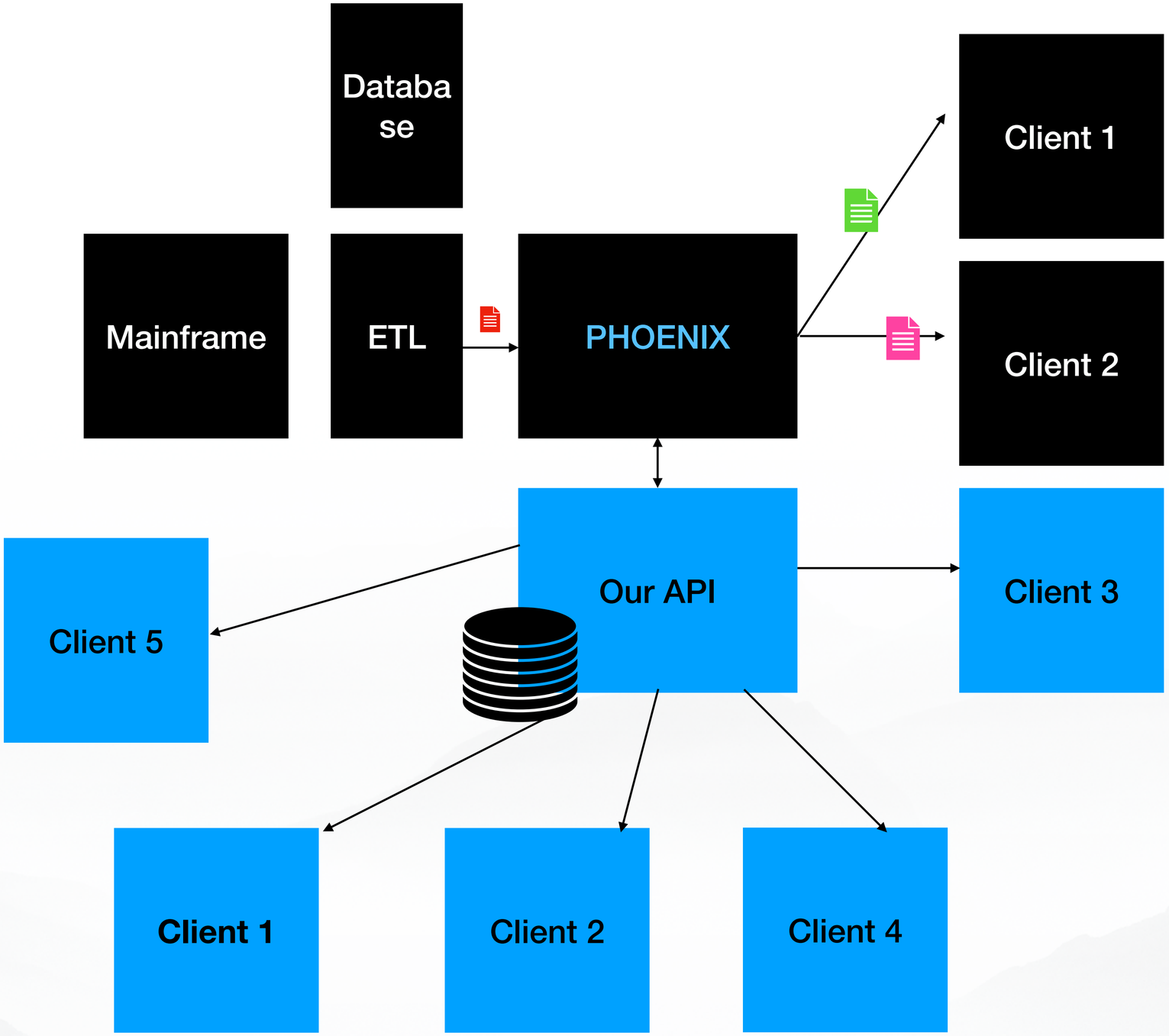
ETL
PHOENIX
Client 1
Client 2
Client 3
Our API


Database
Mainframe
ETL
PHOENIX
Client 1
Client 2
Our API
Client 3


Database
Mainframe
ETL
PHOENIX
Client 1
Client 2
Our API
Client 3
Client 1
Client 2


Database
Mainframe
ETL
PHOENIX
Client 1
Client 2
Our API
Client 3
Client 5
Client 1
Client 2
Client 4

WOULD YOU LIKE ME TO TELL YOU WHAT I ACCOMPLISHED THIS WEEK WITH OUR LEGACY SYSTEM?
@ScottAdamsSays
Dilbert.com
NO, BECAUSE LEGACY SYSTEMS ARE BORING AND I LIKE TO THINK ABOUT NEW THINGS.
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I THOUGHT WE REPLACED ALL OF OUR LEGACY SYSTEMS.
KEEP YOUR THOUGHTS TO YOURSELF.

JESTEŚ KONSULTANTEM? POWIEDZ
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TYM PROJEKTEM ODBLOKOWALIŚMY
BUSINESS CAPABILITIES

Thank you 🙇

@ArturSkowronski

jvm weekly