



Waipapa
Taumata Rau
University
of Auckland

REANVZ

Sharing Sensitive Data with FileSender

Chelsea Finnie
James Love



ResBaz
RESEARCH BAZAAR

July 2025

Tēnā koutou katoa, kua huihui mai i tēnei rangi

Hello to all, who have gathered here today

E mihi ana, e mihi ana, e mihi ana
I greet you

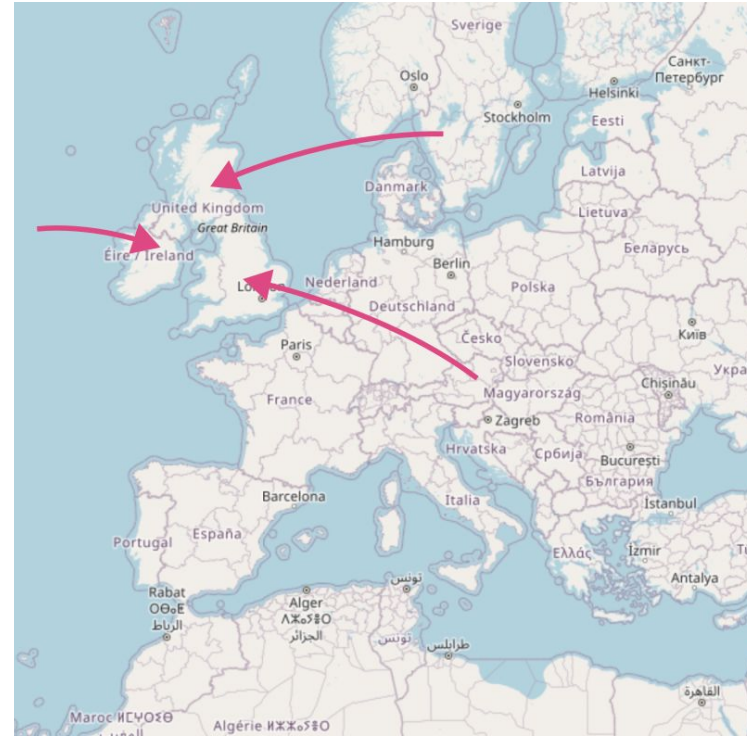
E mihi ana ki ngā mana whenua

I acknowledge the people of this area

E mihi ana ki te tangata whenua

I acknowledge the (indigenous) people of the land

Nō Kōtarani, Aerana me
Ingarihi ōku tīpuna
*My ancestors are from
Scotland, Ireland and England*



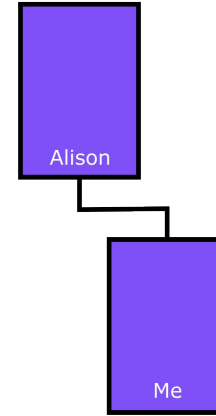
Nō Waikanae ahau, ahakoa i
te whānau mai au i Ōtepoti
*I am from Waikanae, although I
was born in Dunedin*



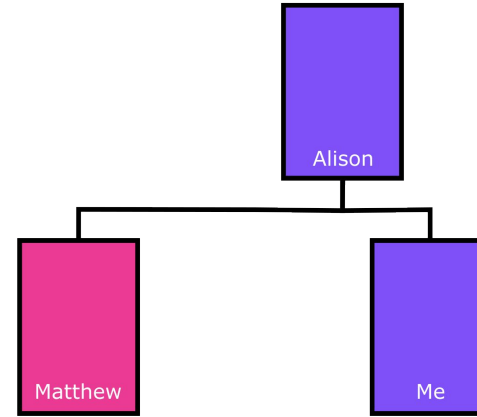
E noho ana au ki Te
Whanganui-a-Tara
I live in Wellington



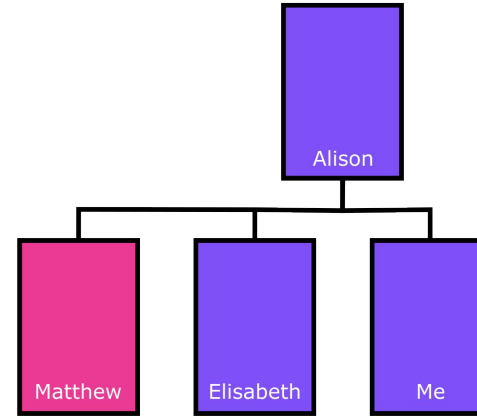
Ko Alison tōku whaea
Alison is my mum



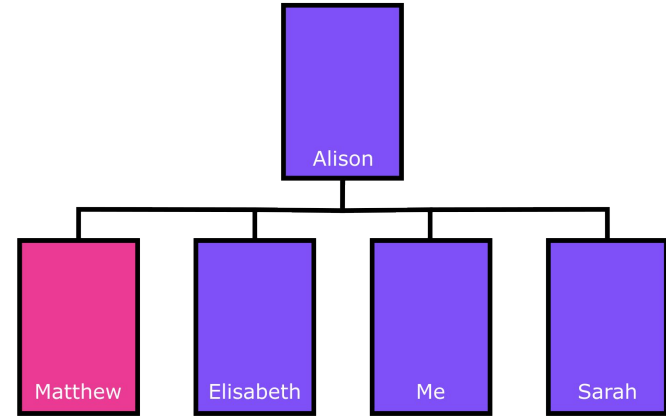
Ko Matthew tōku tungāne
Matthew is my brother



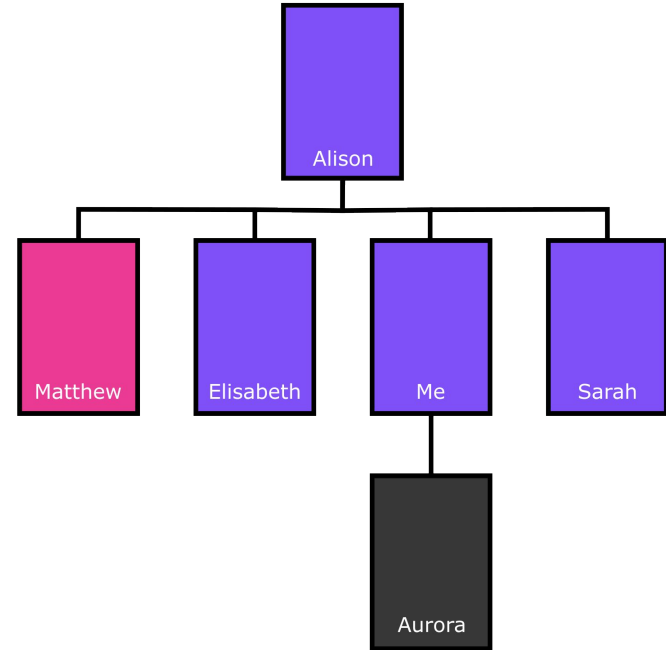
Ko Elisabeth tōku tuakana
Elisabeth is my older sister



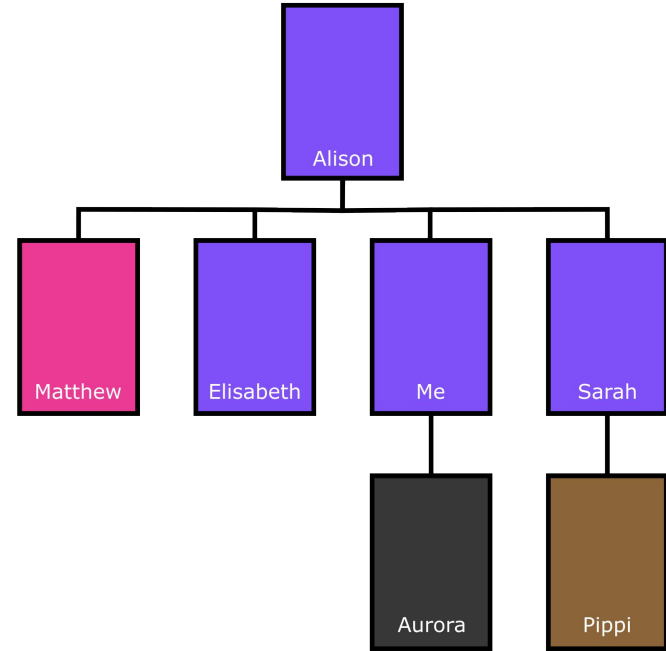
Ko Sarah tōku teina
Sarah is my little sister



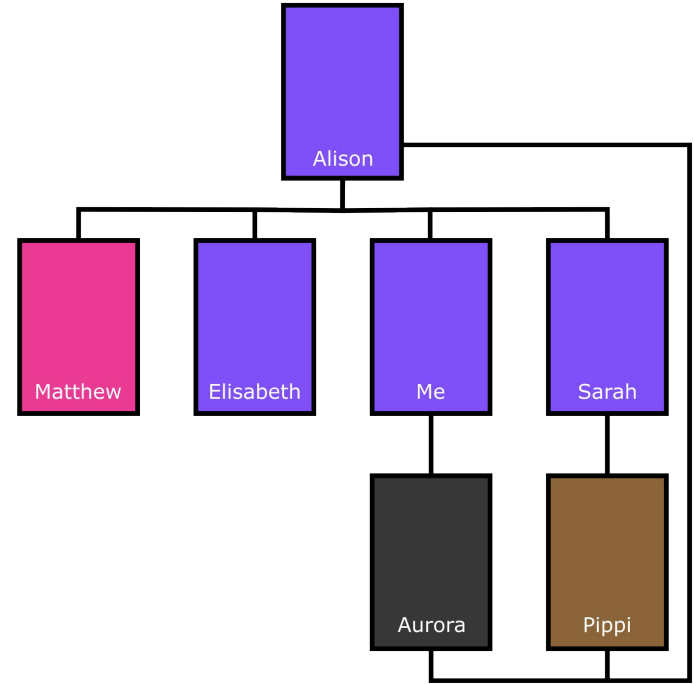
Ko Aurora tāku ngeru
Aurora is my cat



Ko Pippi tā Sarah ngeru
Pippi is Sarah's cat



E noho ana a Aurora rāua ko
Pippi ki te kāinga o tōku
whaea
*Aurora and Pippi live at my
mum's house*



Kei te mitimiti a Aurora i te
taringa o Pippi i tēnei pikitia
*Aurora is licking Pippi's ear in
this picture*



Ko Chelsea tōku ingoa

My name is Chelsea

He kaiwhanake pūnaha a
Ipurangi au ki REANNZ
*I'm a Network DevOps Engineer
at REANNZ
(Literal: Internet Systems Dev)*

REANNZ

He perehitana a Python New
Zealand ahau

*I'm President of Python New
Zealand*



Nō reira

Therefore

Tēnā koutou, tēnā koutou, tēnā koutou katoa

Greetings to you all

**Using Zoom chat, introduce yourself
(your name, institution, role)
and share what you are looking to get out of this session.**

Who Are we?

James Love



- Engagement Specialist, Waipapa Taumata Rau | University of Auckland - **Center For eResearch**
- Sensitive data management and FAIR data principles

Chelsea Finnie

REANNZ



- Network DevOps Engineer,
 - **REANNZ**
 - Designed and implemented **FileSender**
 - Australasia python community (e.g. Kiwi PyCon - <https://kiwipycon.nz/>)
-



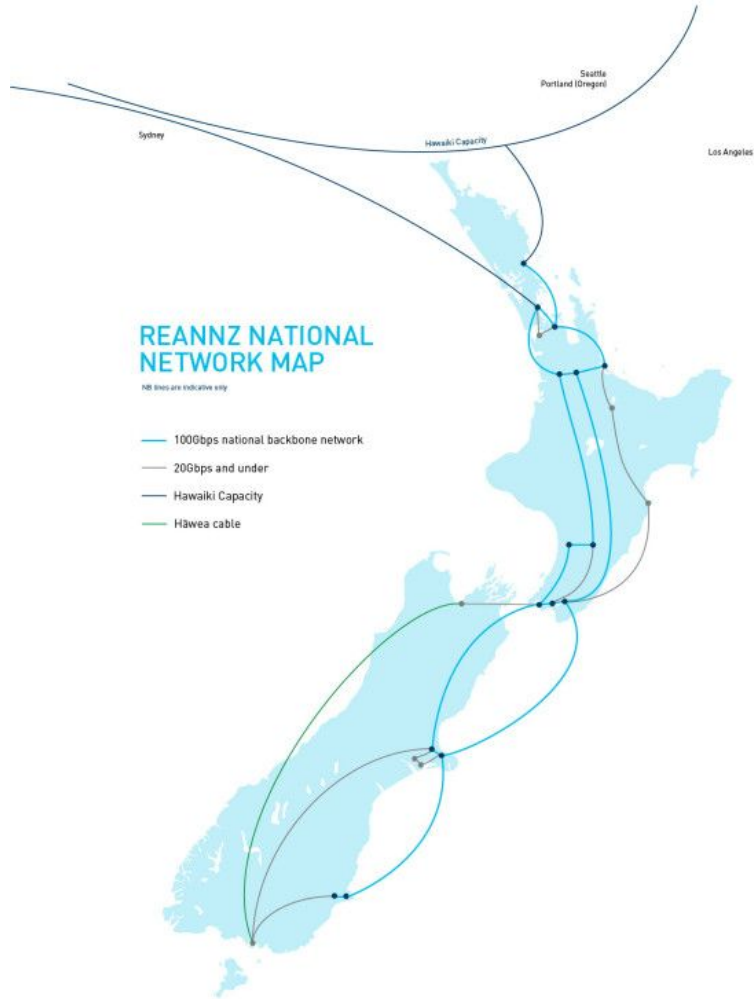
Outcomes

- Understand **legal, policy and ethical** considerations for sharing sensitive data
 - Identify the best available tools for sharing sensitive research data
 - Know how to access and use **Filesender**
 - Filesender **best practices**
-

When would you would need to share sensitive data?

Sharing Data

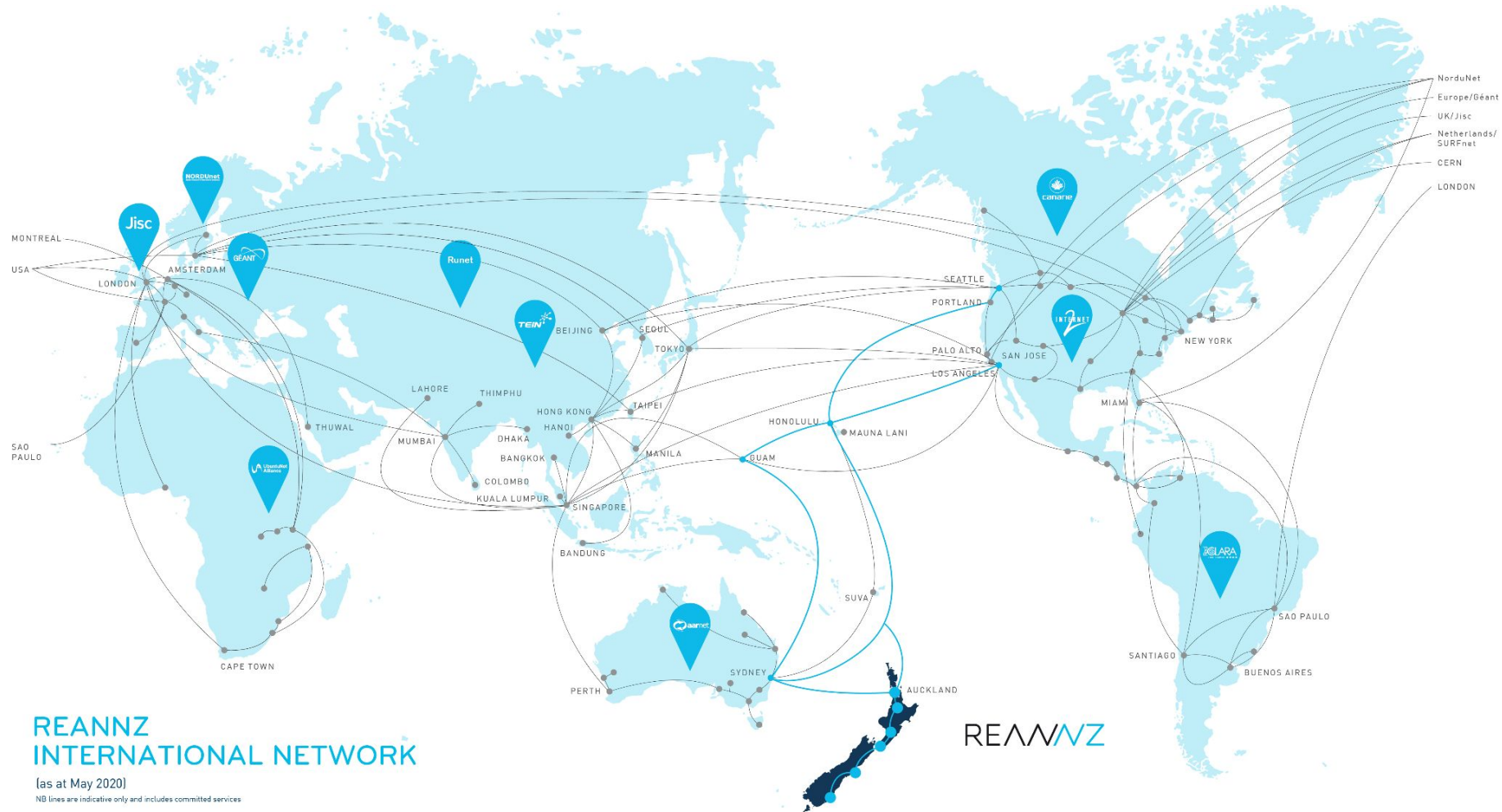
- Collaboration between institutions, commercial entities, databanks, and/or government
- Sharing data within an institution
 - Across projects, teams or even just to yourself
- Transferring data to HPC, cloud resources/external compute
- Compliance with data sharing agreements
- Efficiently moving large volumes of data within NZ



FileSender uses REANZ's National Network

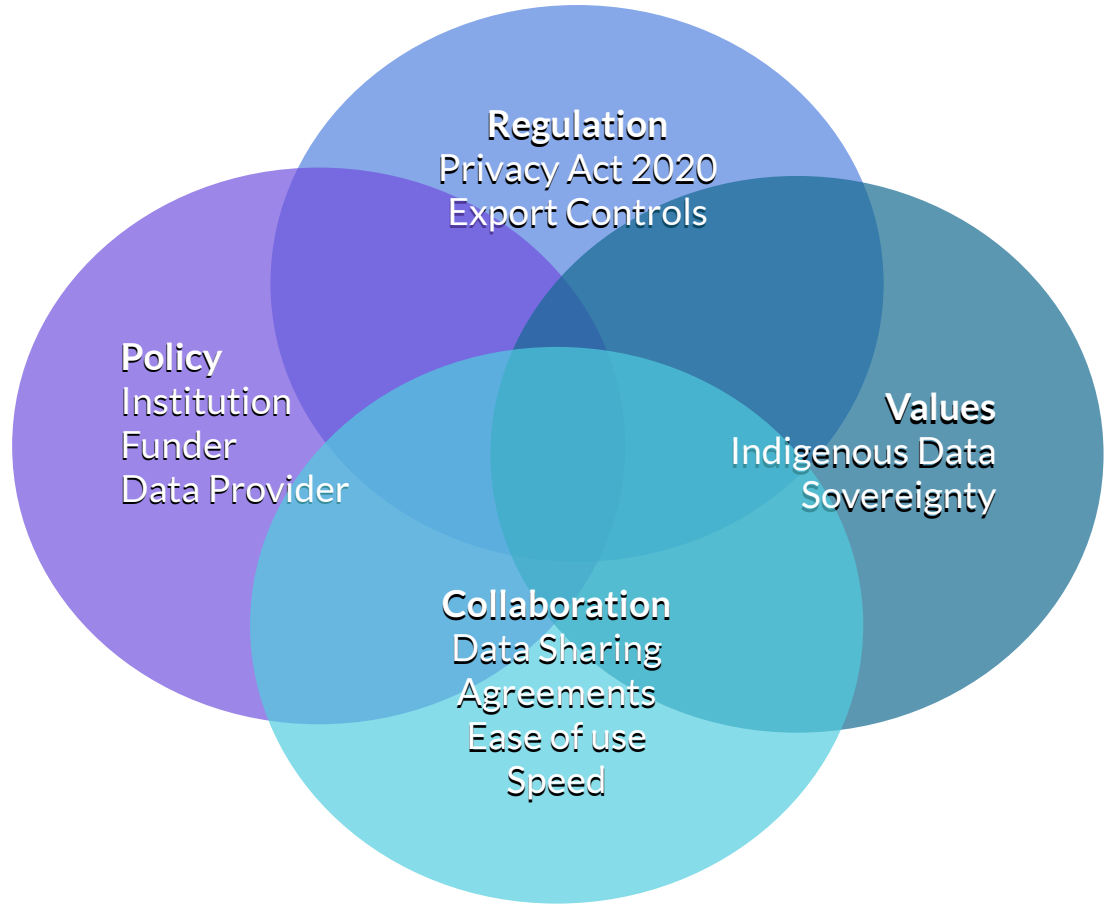
Sharing Files

- Collaboration between institutions, commercial entities and/or government
- Sharing data within an institution
 - Across projects, teams or even just to yourself
- Transferring data to HPC, cloud resources, or external compute
- Compliance with data sharing agreements
- Moving large volumes of data within NZ
- ... **or globally**



What are some considerations when sharing sensitive data?

Secure Data Sharing Considerations



Sensitive Data Classification

- Data classification defines constraints & requirements aroundy **use, storage, and sharing**
- Based on **risk of harm** from misuse or disclosure
 - Includes risk to: Participants, Data Providers, Institutions, Funders, Publishers, Researchers (**You!**)
- Institutional policy requires sensitive data is Stored and shared Securely

University of Auckland

Sensitive Data:

“Disclosure of these data to an unauthorised party would be likely to cause serious damage to the interest / reputation of the University of Auckland or endanger the safety of any natural persons.”

([Link](#))

National Standard

Sensitive Data:

“Compromise would damage the interests of New Zealand or endanger the safety of its citizens.”

([Link](#))

University of Canterbury

Sensitive Data:

“ Any information that is protected against disclosure by law, privacy regulators, or contract.

Any information that requires strict protection due to the potential harm or implications that could arise from its inadvertent or malicious disclosure or misuse.

Any information that unauthorised release could lead to serious harm for individuals or the University.”

([Link](#))

Examples of Sensitive data

- Personally identifiable information (PII):

Name: Anakin Skywalker

- Human **Health Data:**

Diagnosis: Arms and legs cut off then fell in lava

- Part of **national defence:**

Occupation: Runs the Death Star



- Subject to institutional **ethics processes**

Jedi Master exam ethics approval: Pending

- **Commercially sensitive or intellectual property:**

IP status: Property of Disney Corporation

Examples of Sensitive data

- **Personally identifiable information (PII)**, i.e. home address, passport, driver's license, IRD number
- Subject of a patent application for intellectual property protection
- Human **Health Data**
- Subject to **export controls**
- Are part of **national defence**
- **Commercially** sensitive
- Shared from a **data provider** with specific data restrictions (e.g. Biobanks)
- Subject to institutional **ethics processes**
- IT systems credentials, passwords, encryption keys or PINs.
- Keyfiles for **Re-identification**

Data Sharing Agreements

- Sharing or transferring data that is in any way access controlled
 - Often includes requirements for secure/encrypted transfer
- Formal contract sets out:
 - purpose of the data sharing
 - what will happen to the data at each stage (how the data will be transferred and stored)
 - sets standards and helps all the parties to be clear about their respective roles (access restrictions, stewardship)
- Parties demonstrate their accountability to legal, ethical, data sovereignty, etc. requirements.

Privacy Act

Privacy principles covered by the Privacy Act 2020

[National Ethics Advisory Committee](#)

[Principles for the safe and effective use of data and analytics, 2018](#)

Stats NZ & the Privacy Commission

Principle 12 states that personal information may only be disclosed to organisations in other countries where there are similar protections to those in the New Zealand Privacy Act.



Health Information Privacy Code

- Information privacy principles for the health sector
- Covers health information about identifiable individuals
- Applies to all health agencies ([including departments of tertiary institutions that train healthcare professionals](#))
- Similar to, but **more restrictive** than Privacy Act 2020

Rule 5.1(b): “if it is necessary for the information to be given to a person in connection with the provision of a service to the health agency, including any storing, processing, or destruction of the information, everything reasonably within the power of the health agency is done to prevent unauthorised use or unauthorised disclosure of the information”

Indigenous Data Sovereignty

Indigenous Peoples have inherent rights and responsibilities to **Indigenous data**.

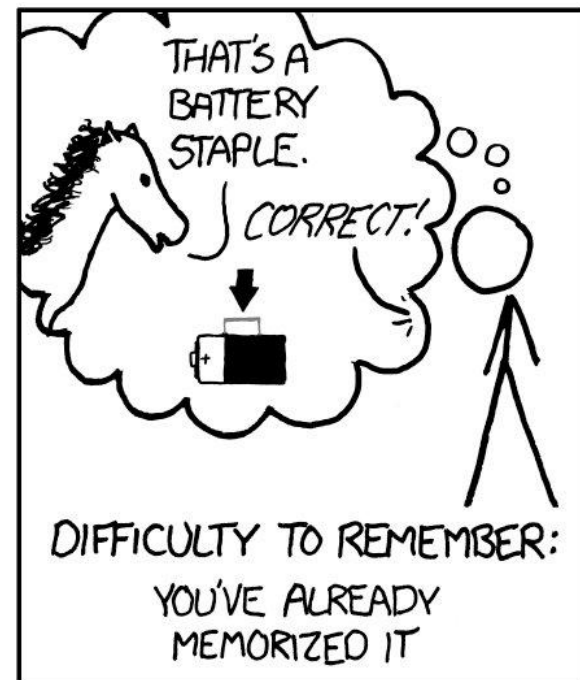
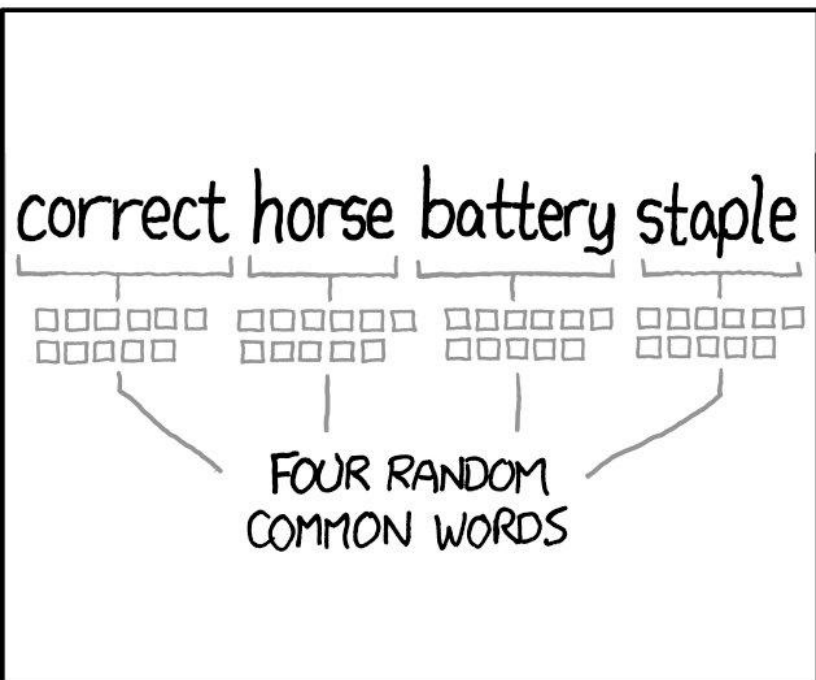
- [CARE](#) principles for Indigenous data sovereignty Collective Benefit, **Authority to Control**, Responsibility, and Ethics
- [Māori Data Sovereignty principles](#)
Rangatiratanga (Authority), Whakapapa (Relationships),
Whanaungatanga (Obligations), Kotahitanga (Collective benefit),
Manaakitanga (Reciprocity) & Kaitiakitanga (Guardianship)
- [Pacific Data Sovereignty](#)

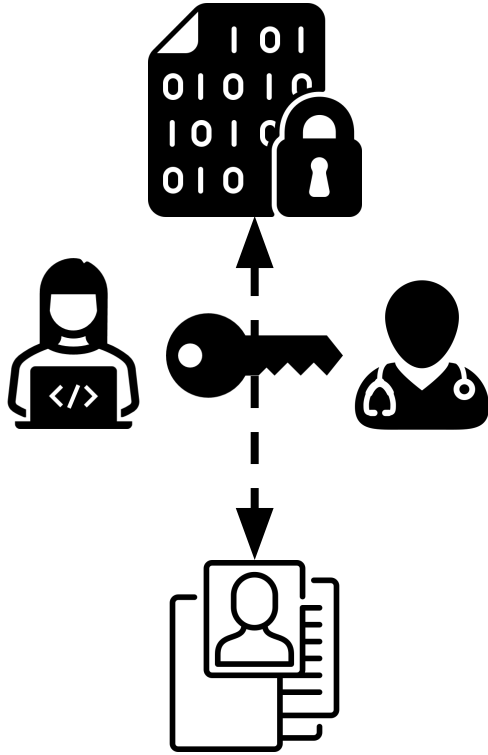
All will impact sharing and storage requirements of data at all stages of the research process.

Practices and Tools

Good Security Practices

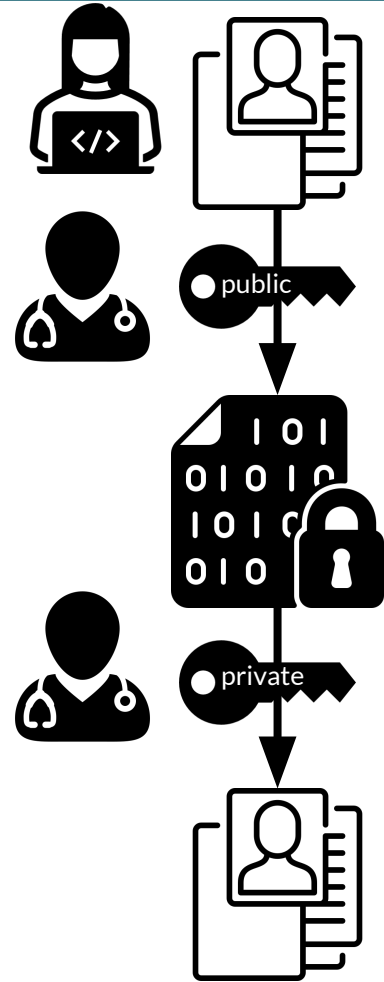
- General cybersecurity awareness (e.g., don't reuse passwords, change passwords regularly, use a screen lock on all devices)
- Use multifactor authentication (SSO)
- Use **secure** and systems and hardware
- Data plans and sharing agreements – regularly review
- Review **who** has access to **what** regularly
- Keep updated
- Use **encryption**
- **Strong passwords** and secure keys





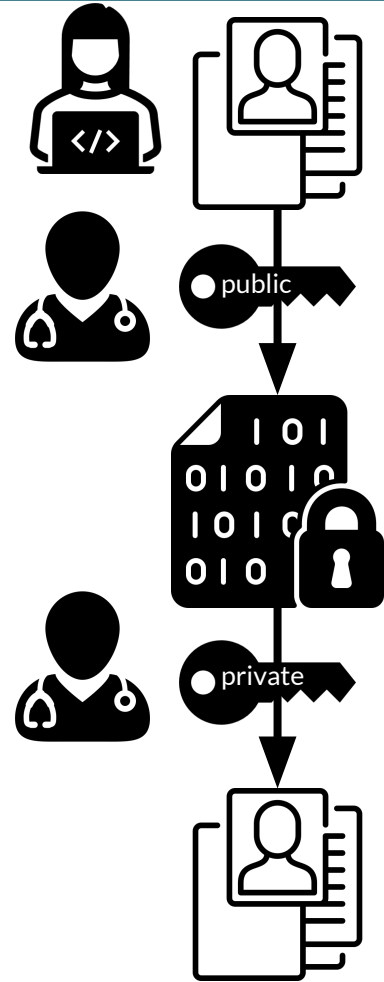
Encryption

- Protects data by converting it into unintelligible code that can only be read by holders of decryption keys/passwords
- May be **Symmetric** or **Asymmetric** (A **public** key **encrypts**, Another **private** key **decrypts**)



Encryption

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- May be **Asymmetric** (A **public** key encrypts, Another **private** key decrypts)



Encryption

- Available as part of:
 - [Archiving software](#) - Password protected zip
 - [Enterprise Microsoft office software](#) - Encrypted .xls .docx even .ppt!
 - [Command line tools](#) such as GnuPG - ``gpg --generate-key`` ``gpg --encrypt`` ``gpg --decrypt``
- Will add overheads



What tools for sharing sensitive data are you familiar with?

File Sharing Tools

- REDCAP
- Email
- Direct (SFTP, rsync, rclone, SCP...)
- Physical Transfer (Hard drive on a truck)
- Globus
- **FileSender**

File Sharing Tools

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Direct Transfer

Rsync: Synchronises files between two locations.

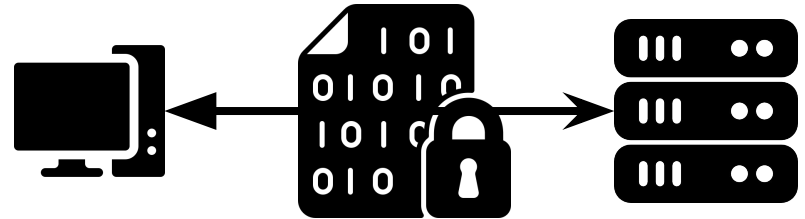
Command ``rsync -options \source target@server``

- On one device
- Across two drives
- Across a network

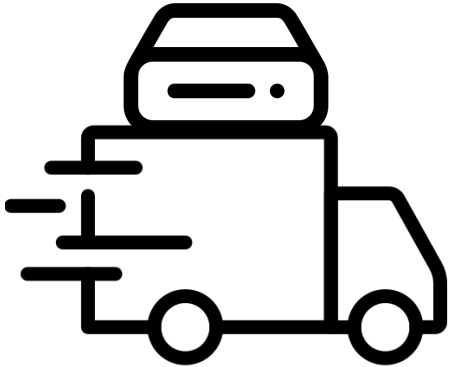
SSH File Transfer Protocol (SFTP)

- Transfer files (and more!) over an SSH connection
- [FileZilla](#) - Gui Client
- [WinSCP](#) - Windows Client

Requires arranging specific network and security key setup with recipient.



Courier Transfer (Hard drive on a truck)

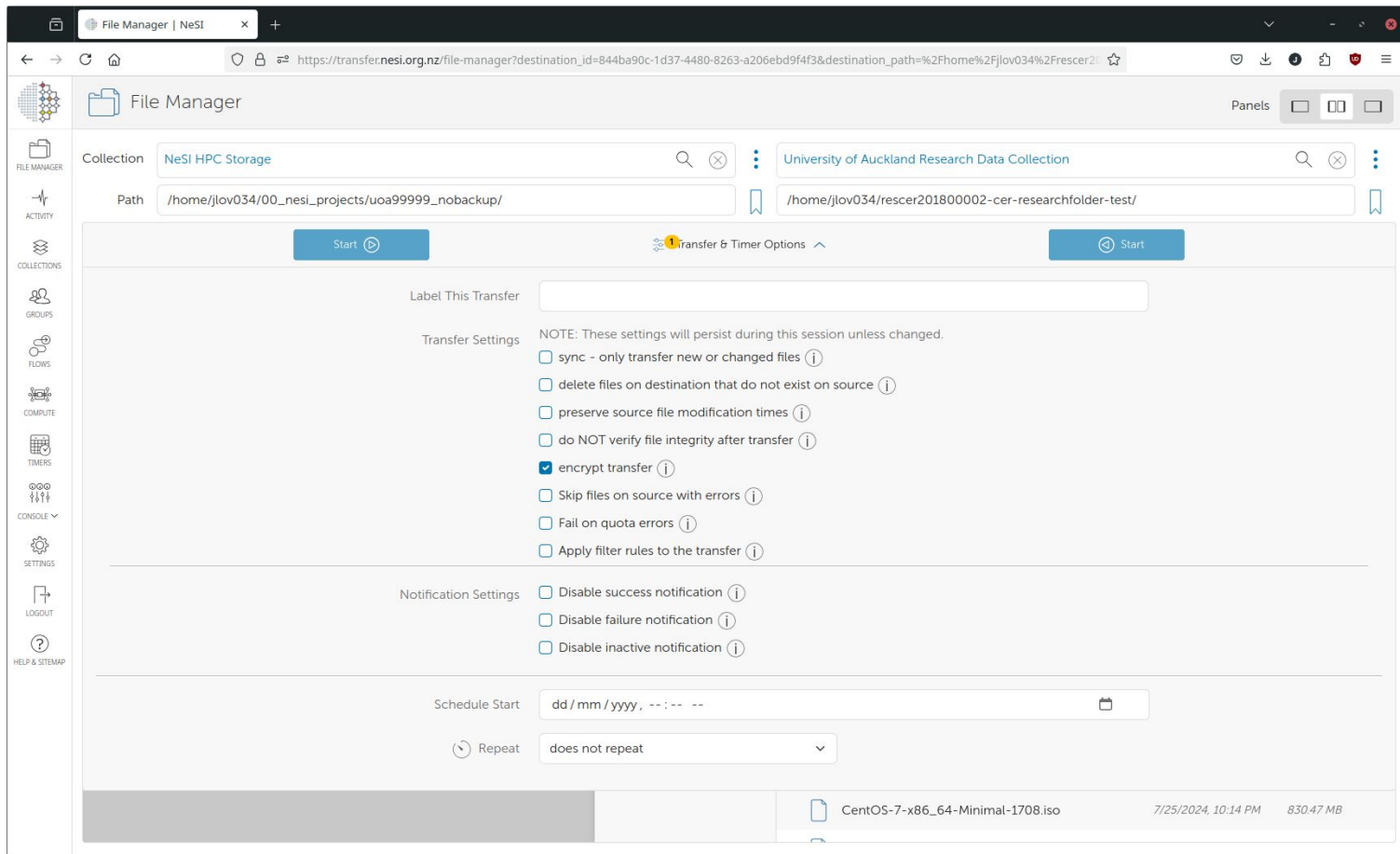


- Must use approved couriers or delivery services (as per data classification and institutional policy)
- Great for HUGE volumes of data and data paired with physical artefacts/samples
- Packaging requirements and tamper protections
- Addressing and handover policies
- Cost

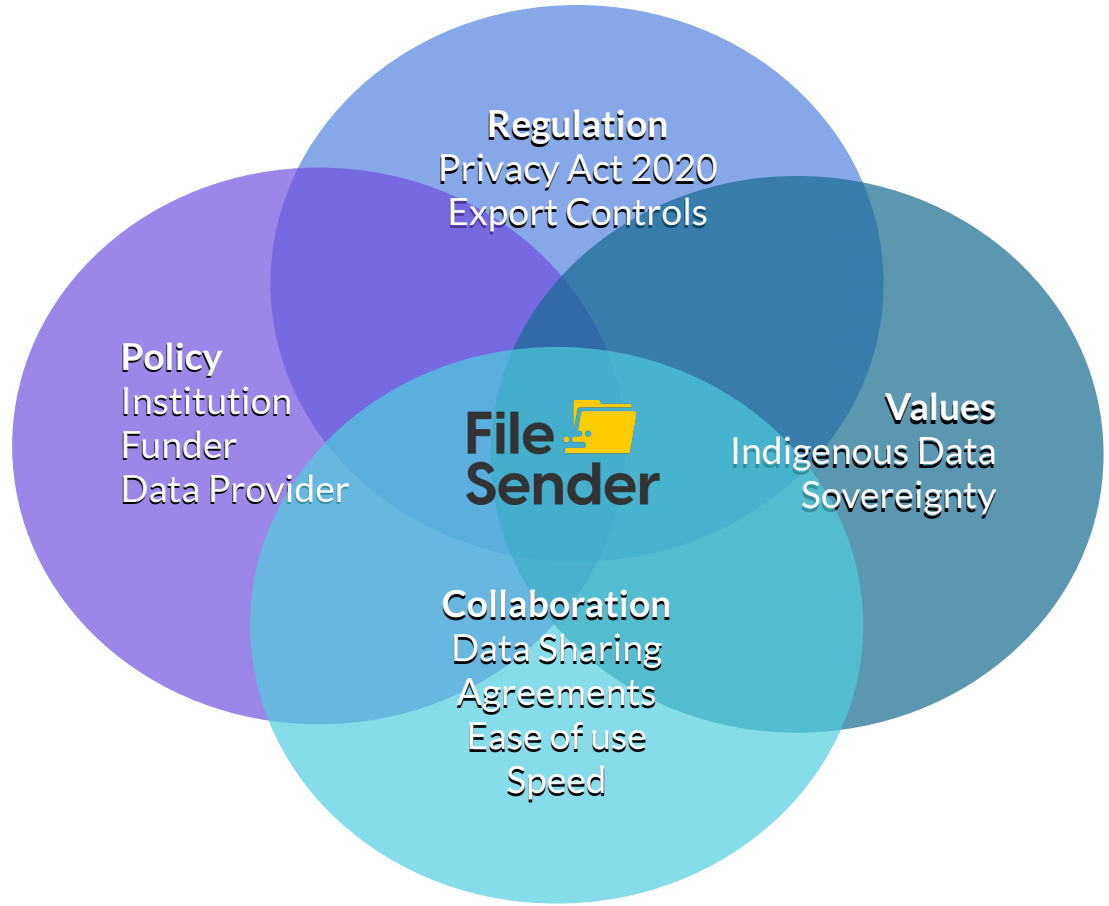
[GOVT guidelines](#)

Globus

- Connects **Endpoints**
- Research storage to/from NESI HPC
- Secure large transfers



Secure Data Sharing Considerations



Access to FileSender:

<https://filesender.reannz.co.nz/>

Login to FileSender

REANNZ FileSender service

Please select your organisation below, you will be redirected to complete the login process.

Q

AUT University

Lincoln University

Massey University

The University of Auckland

The University of Otago

The University of Waikato

Continue to your organisation

☐ Remember my organisation

REANNZ
TUAKIRI

About Tuakiri

Contact Tuakiri support

REANNZ
TUAKIRI

Switch

SURF

REAN/VZ

RNP

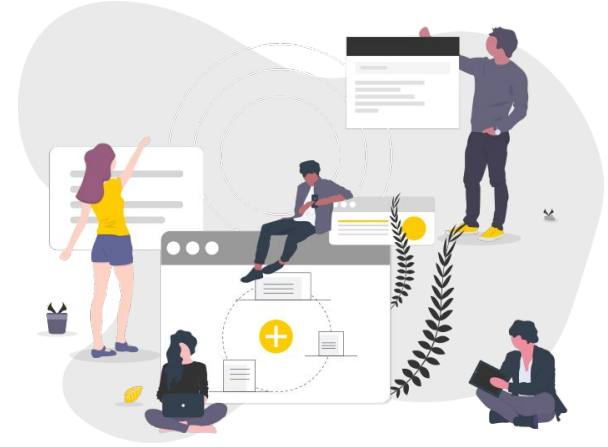
Belnet

Connecting communities

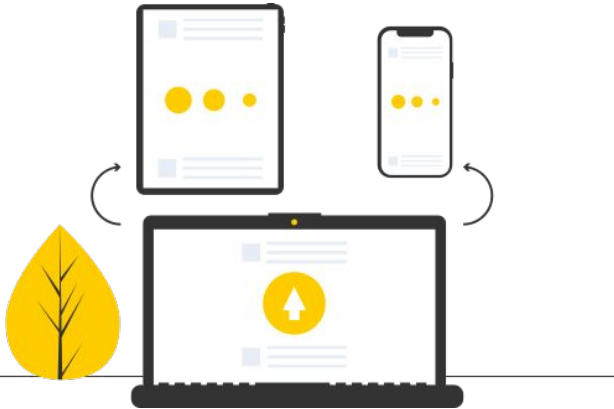
aarnet

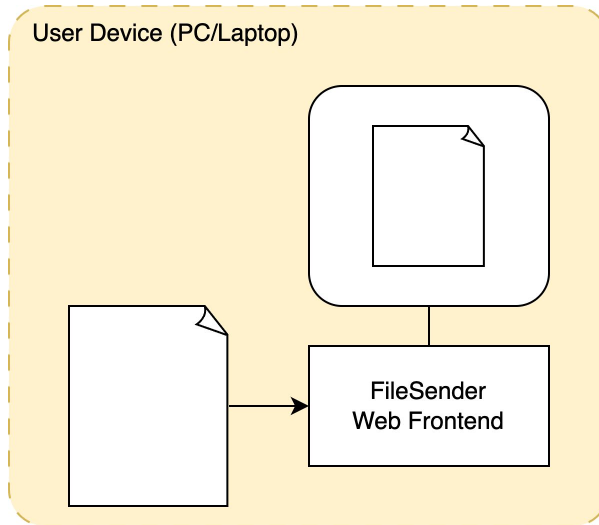
HEAnet
Ireland's National Education & Research Network

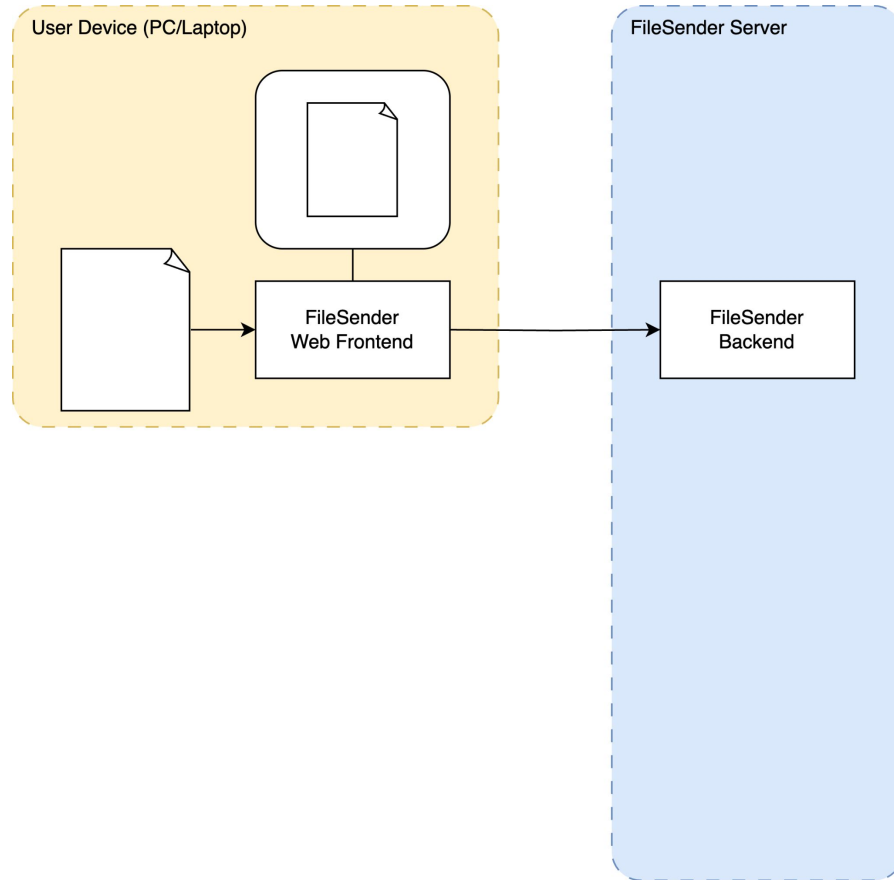
File Sender

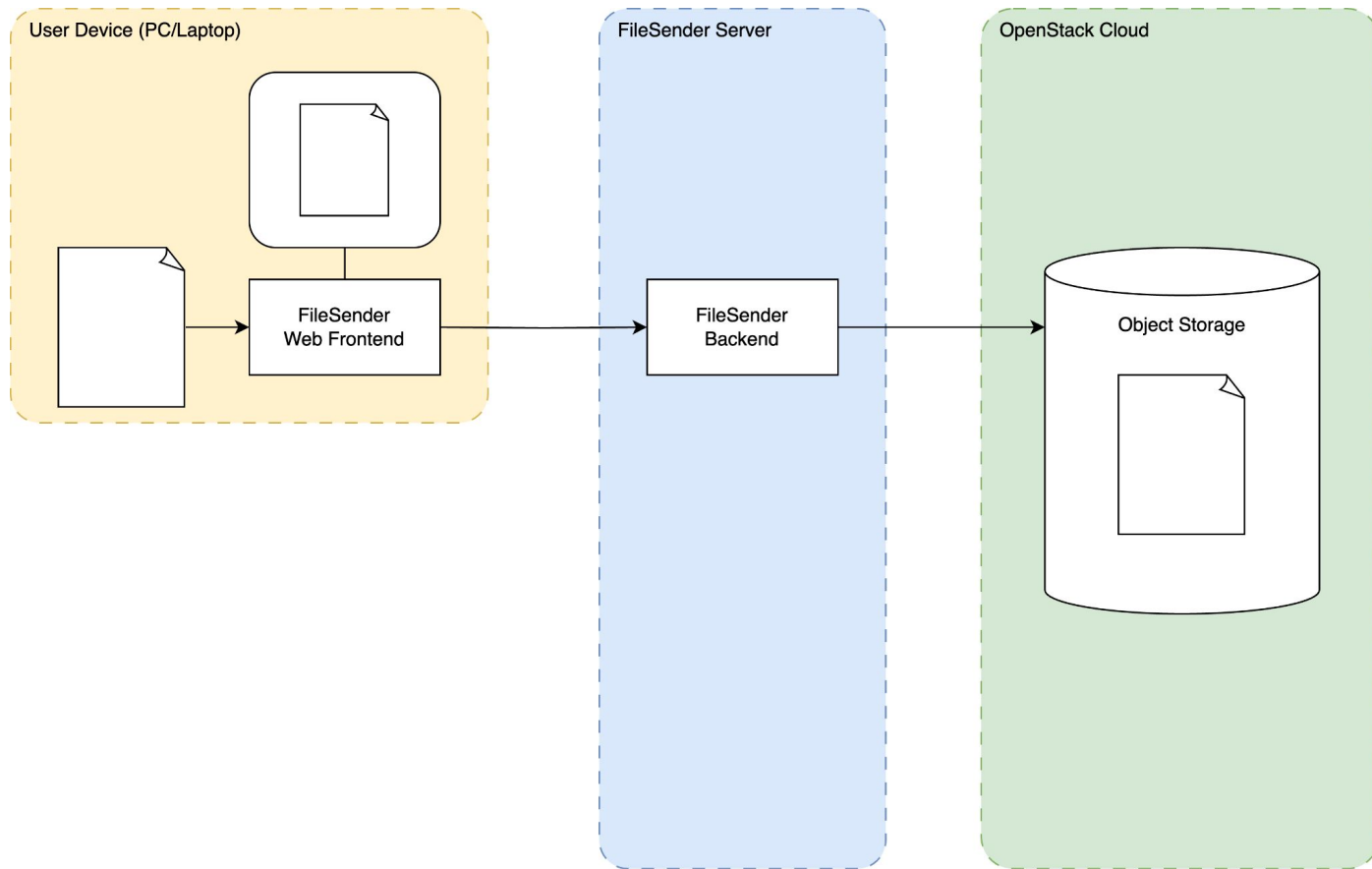


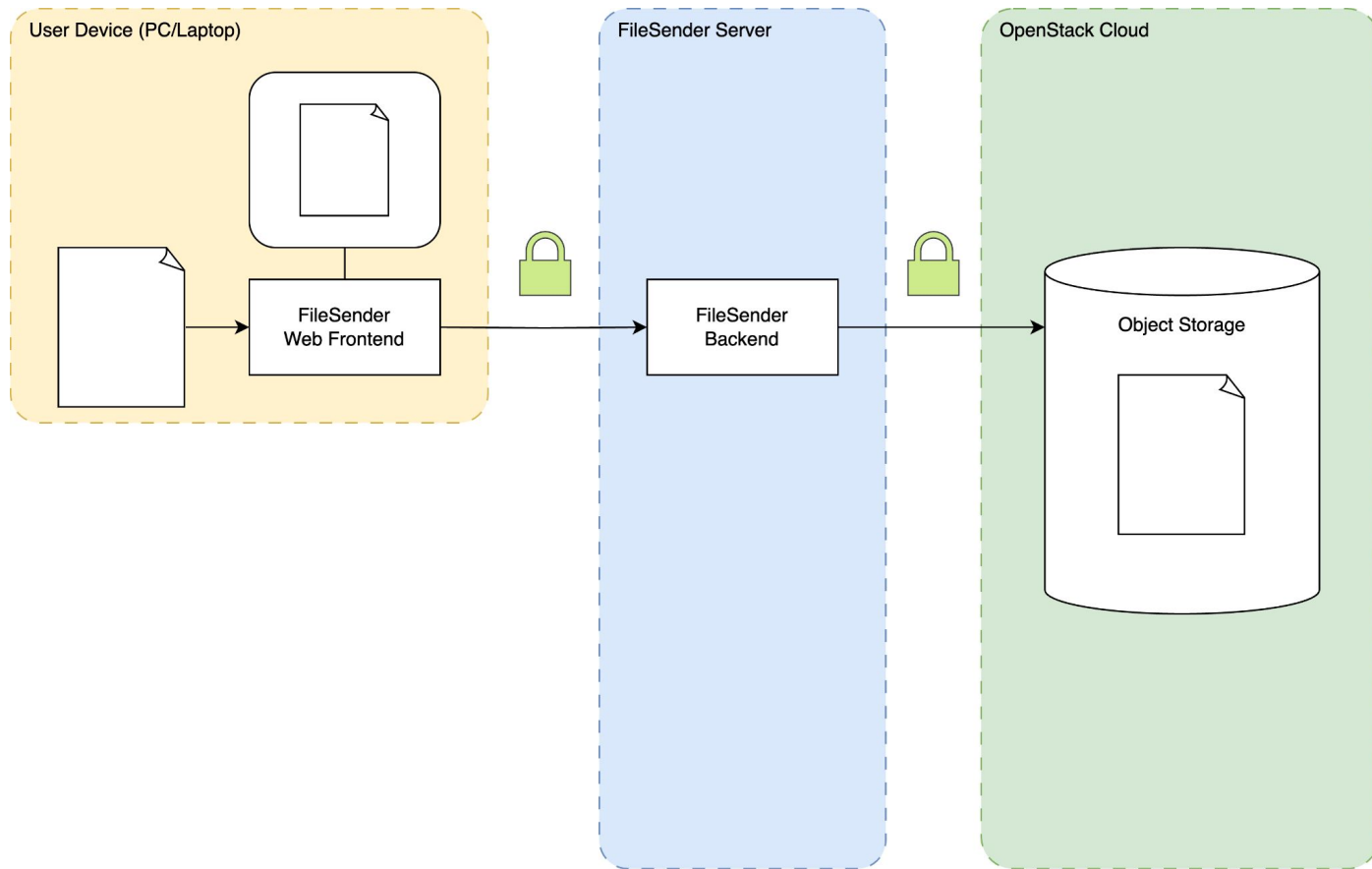
<https://filesender.org>

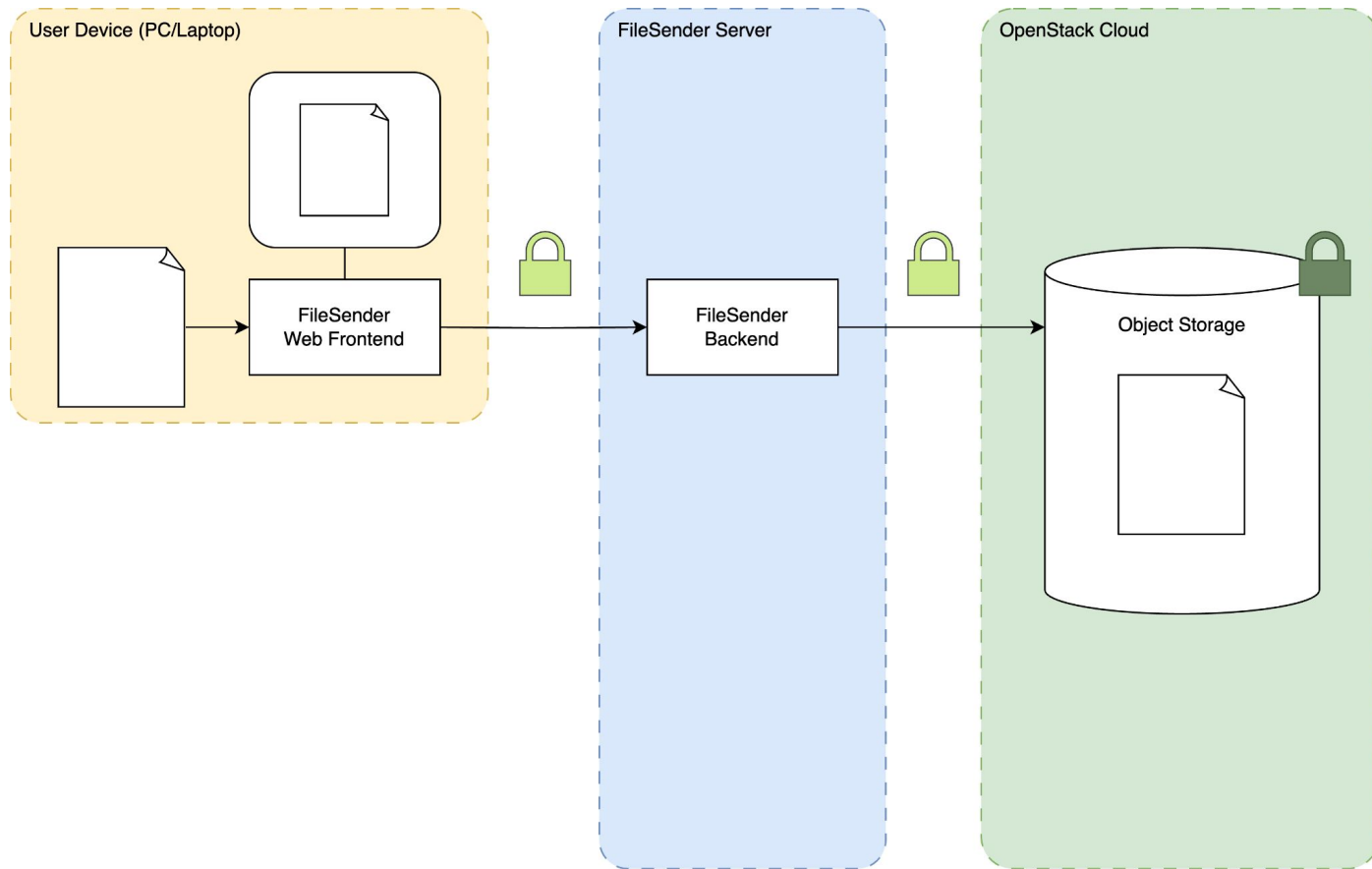


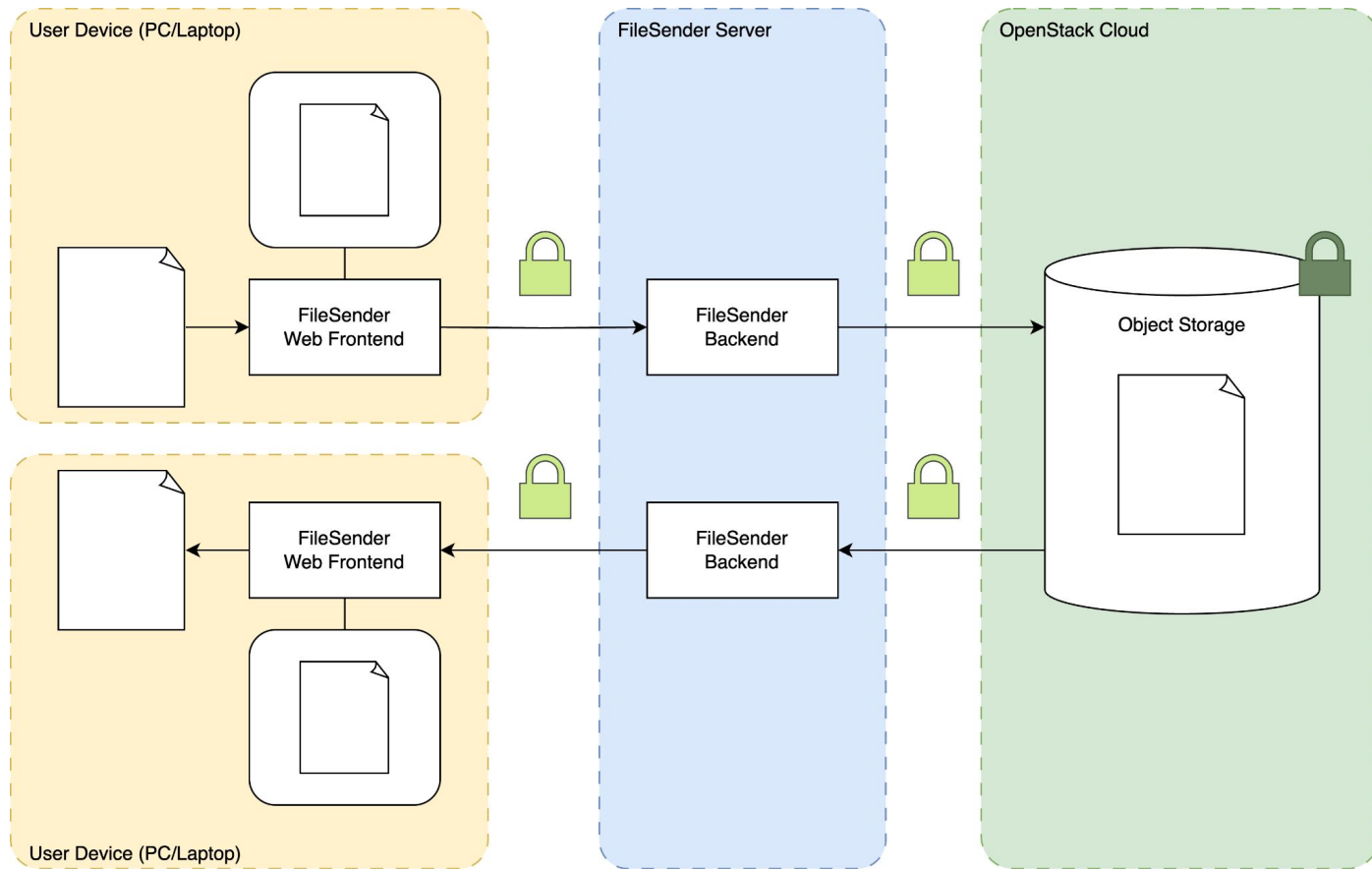




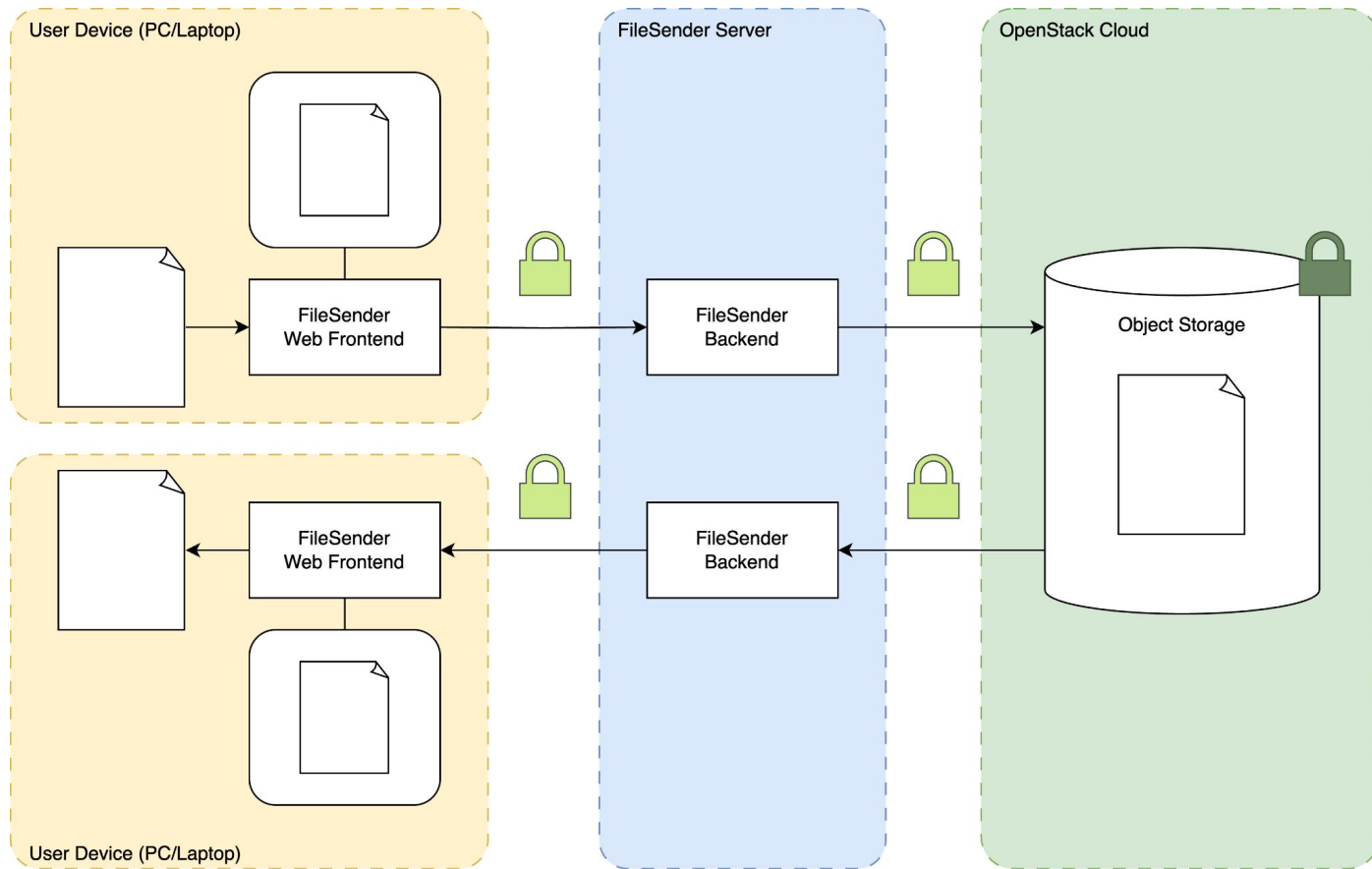


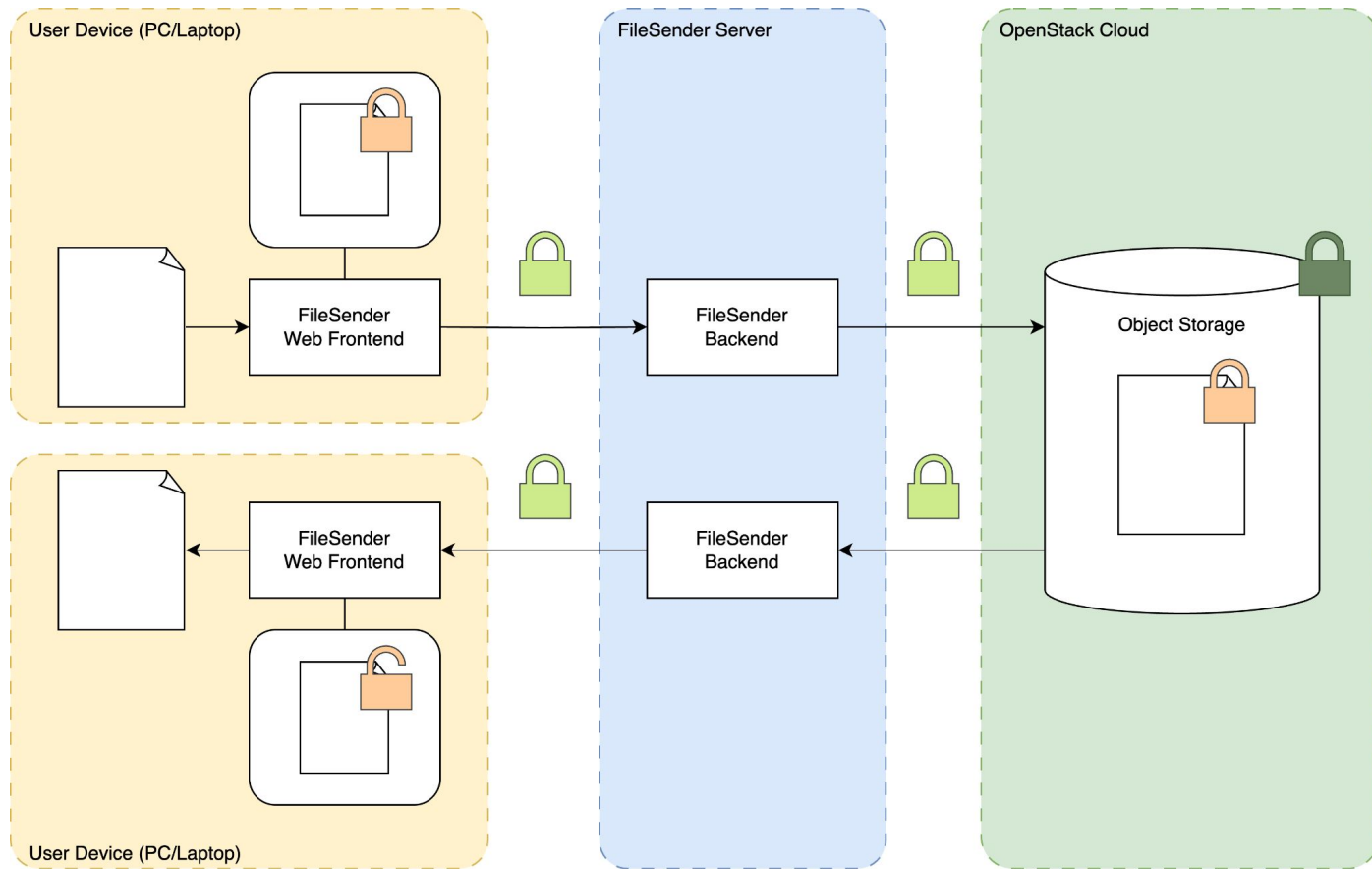




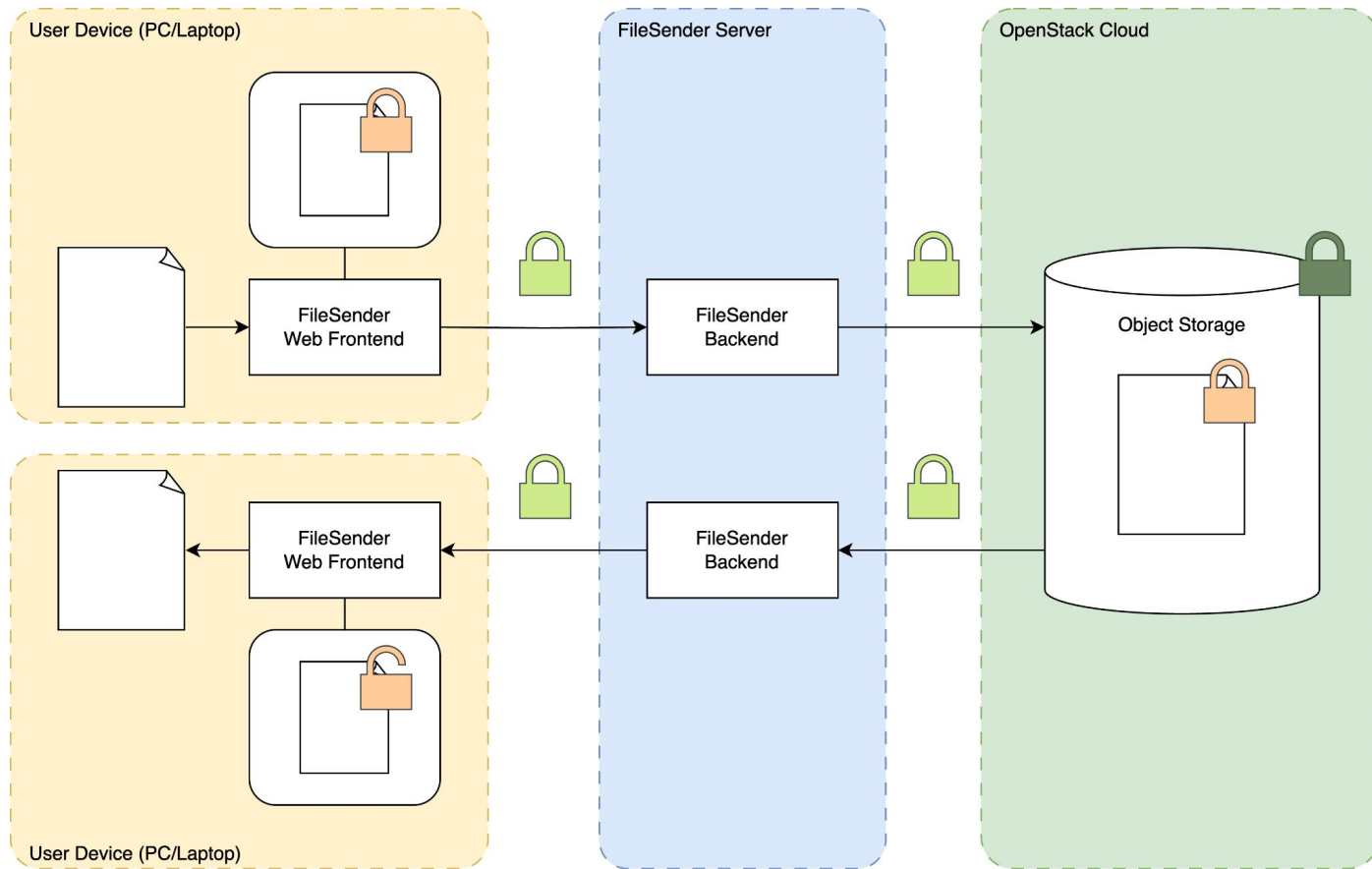


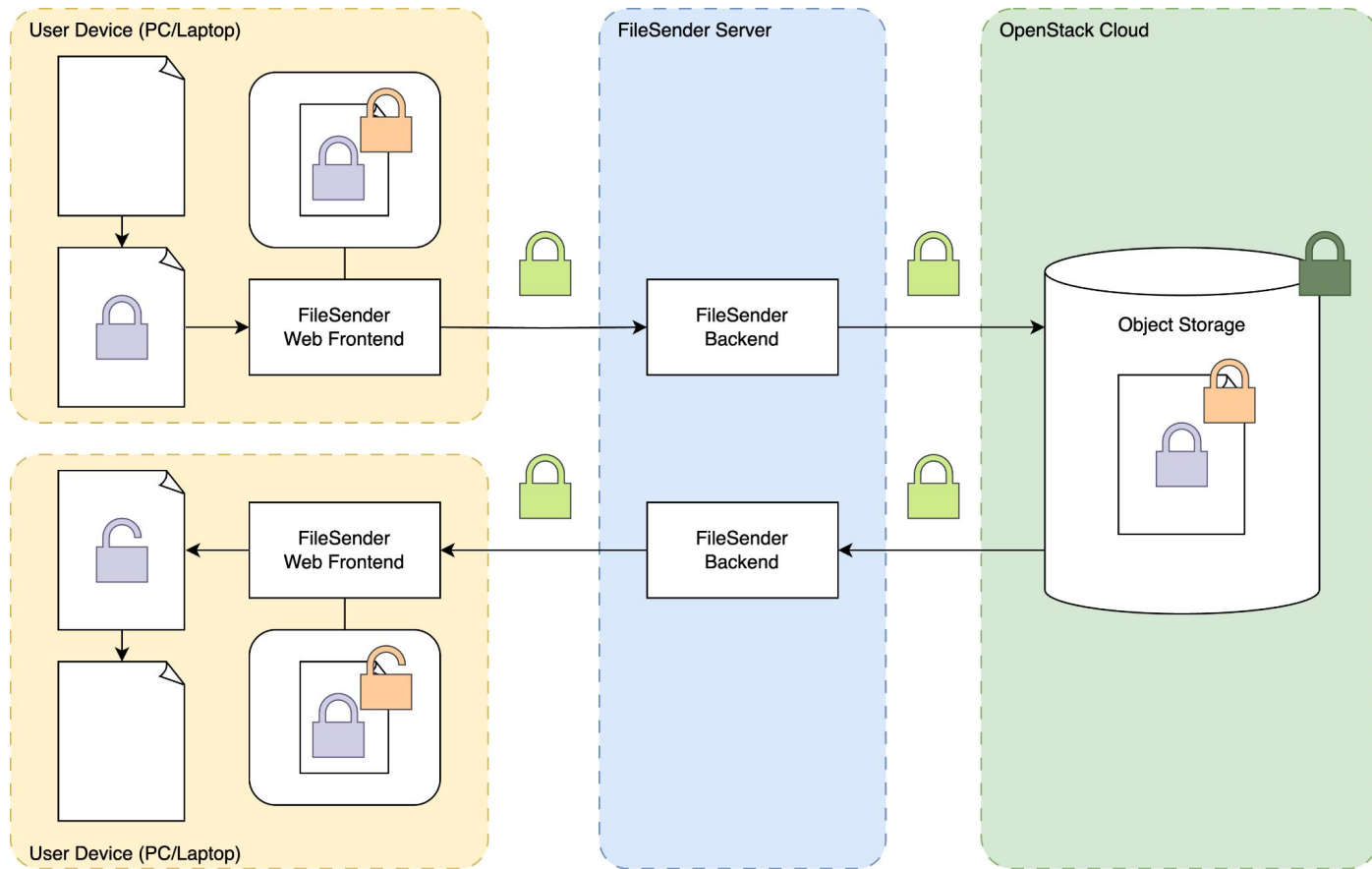
Live Demo (Standard Upload)





Live Demo (Encrypted Upload)





REANNZ FileSender

- Accessible to members with Tuakiri.
- Send files to anyone.
- Enables secure collaboration.

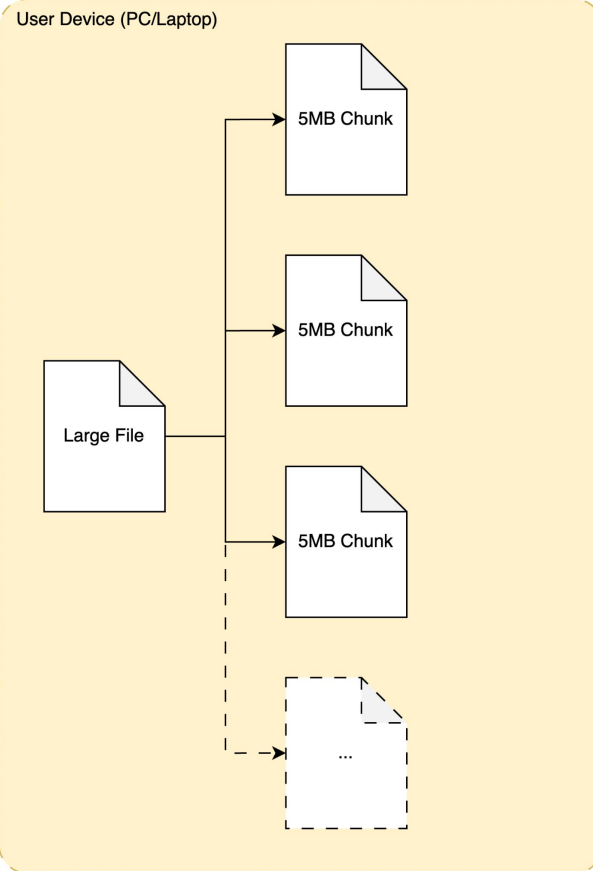
Live Demo (Guest Upload)

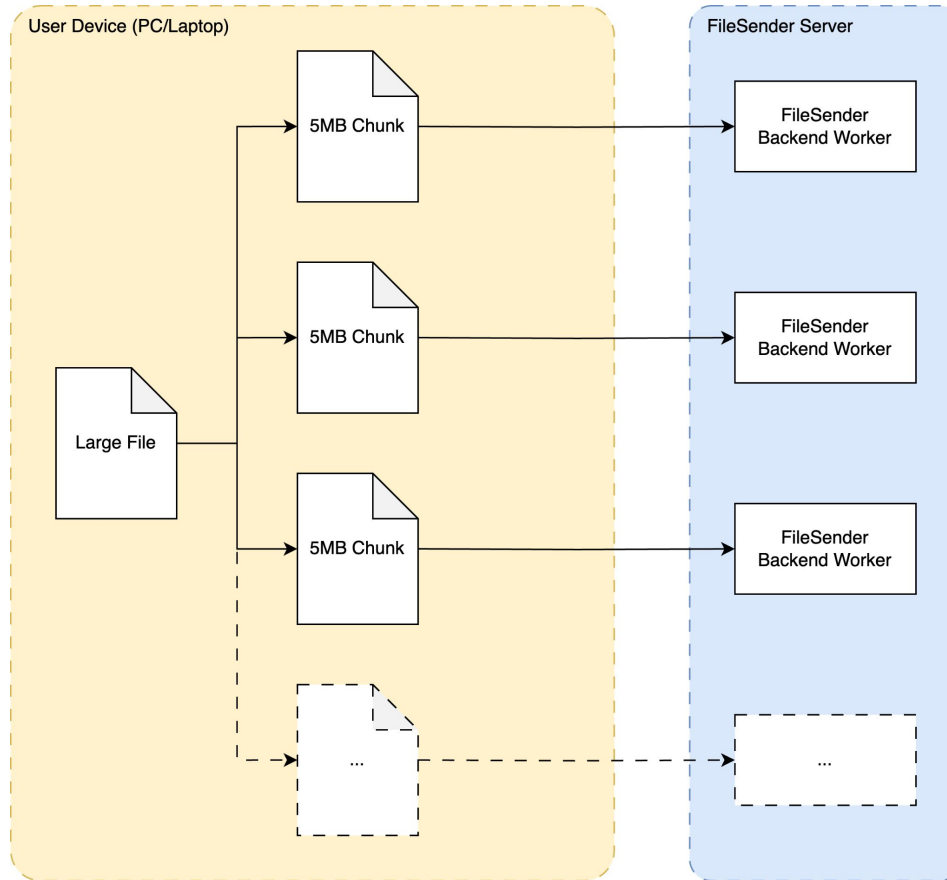
Now your turn!

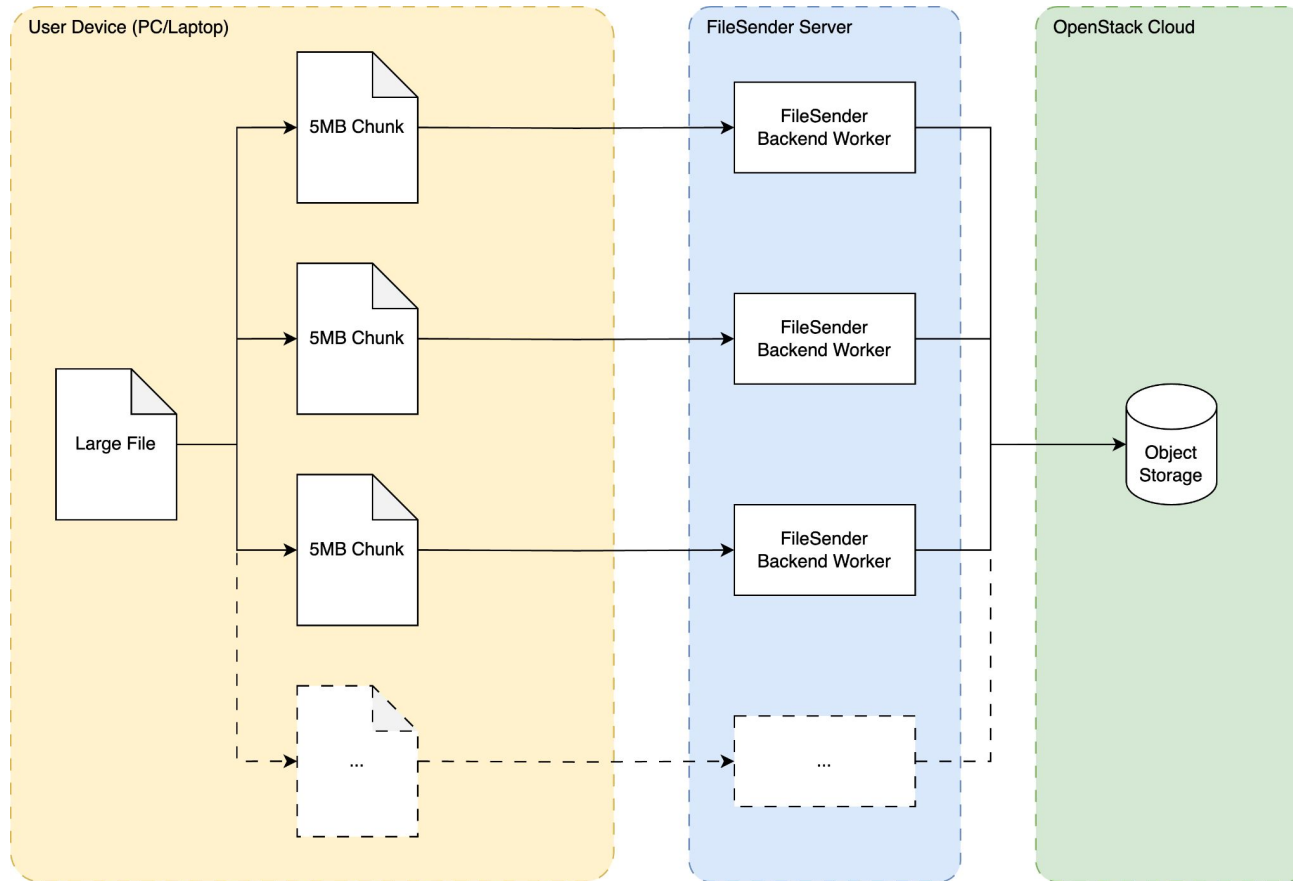
- Create a text file with a fun message to me.
- Go to the link posted in chat.
- Upload the file and make sure it's encrypted by setting the password to:
 - FileSenderAtResBaz2025!
- I will read out the best one (or more) at the end!

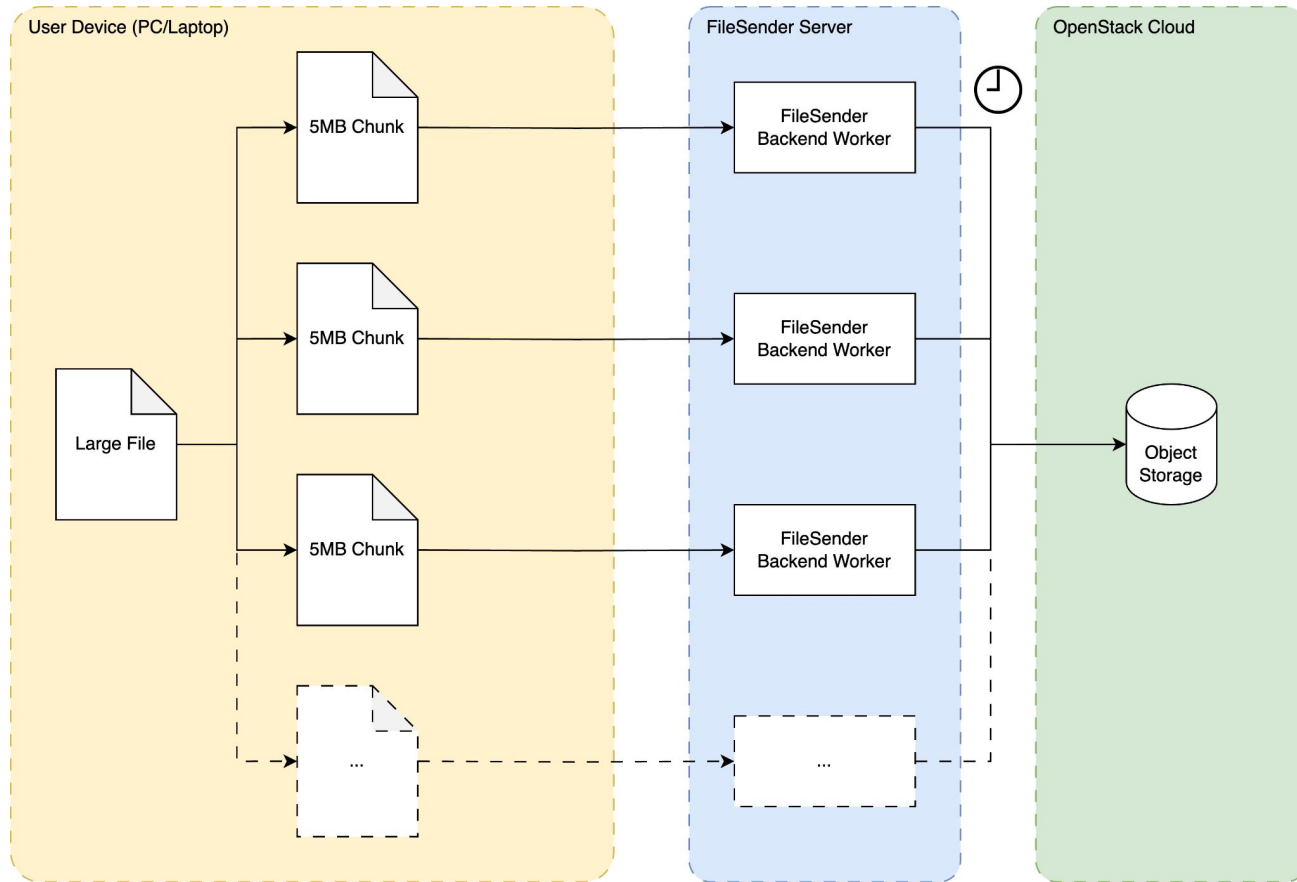
REANNZ FileSender Best Practices

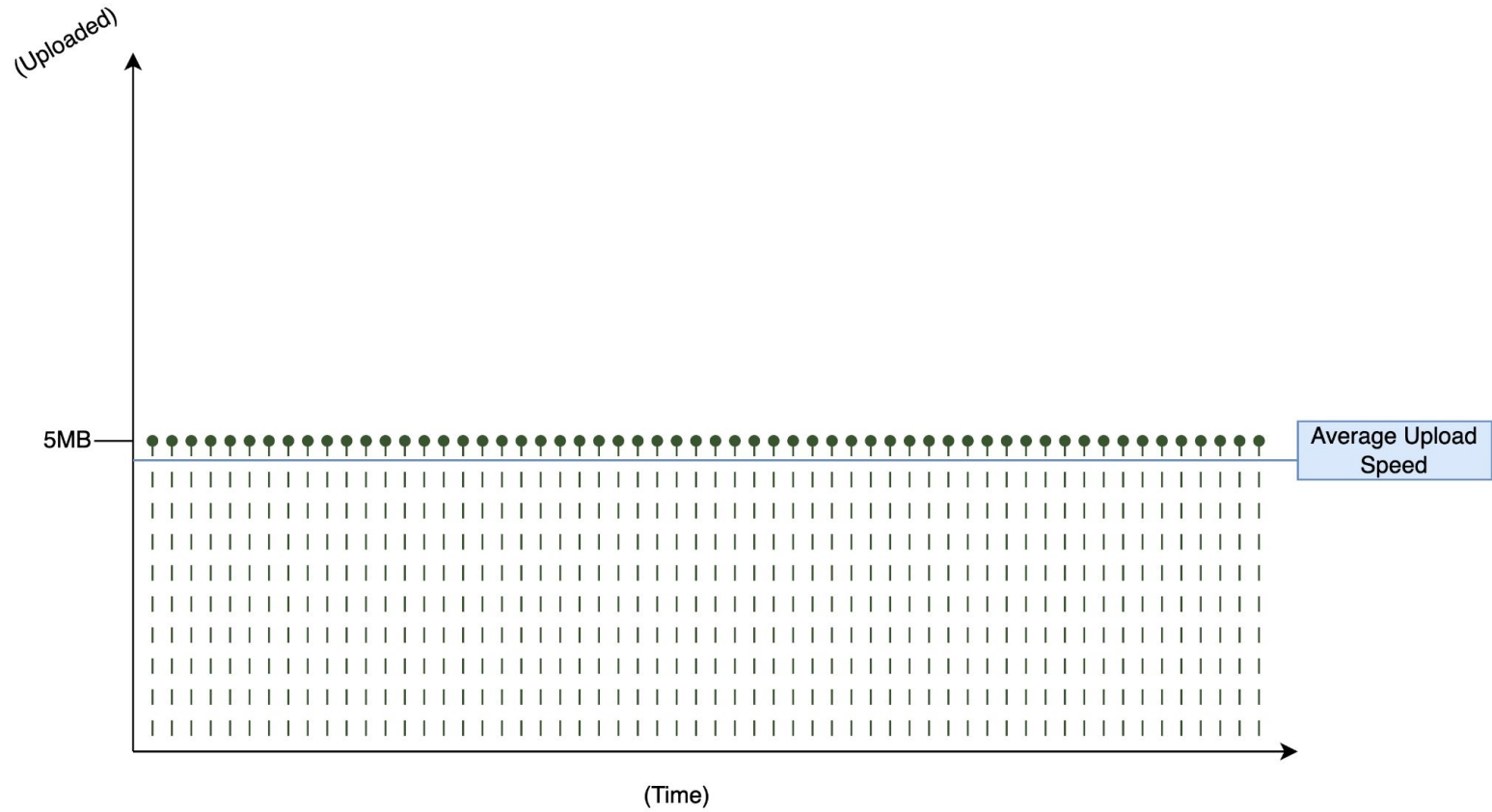
- Know when to use encryption.
- Review security and file handling policies/guidelines.
- Share links are more reliable.
- Archive small files.

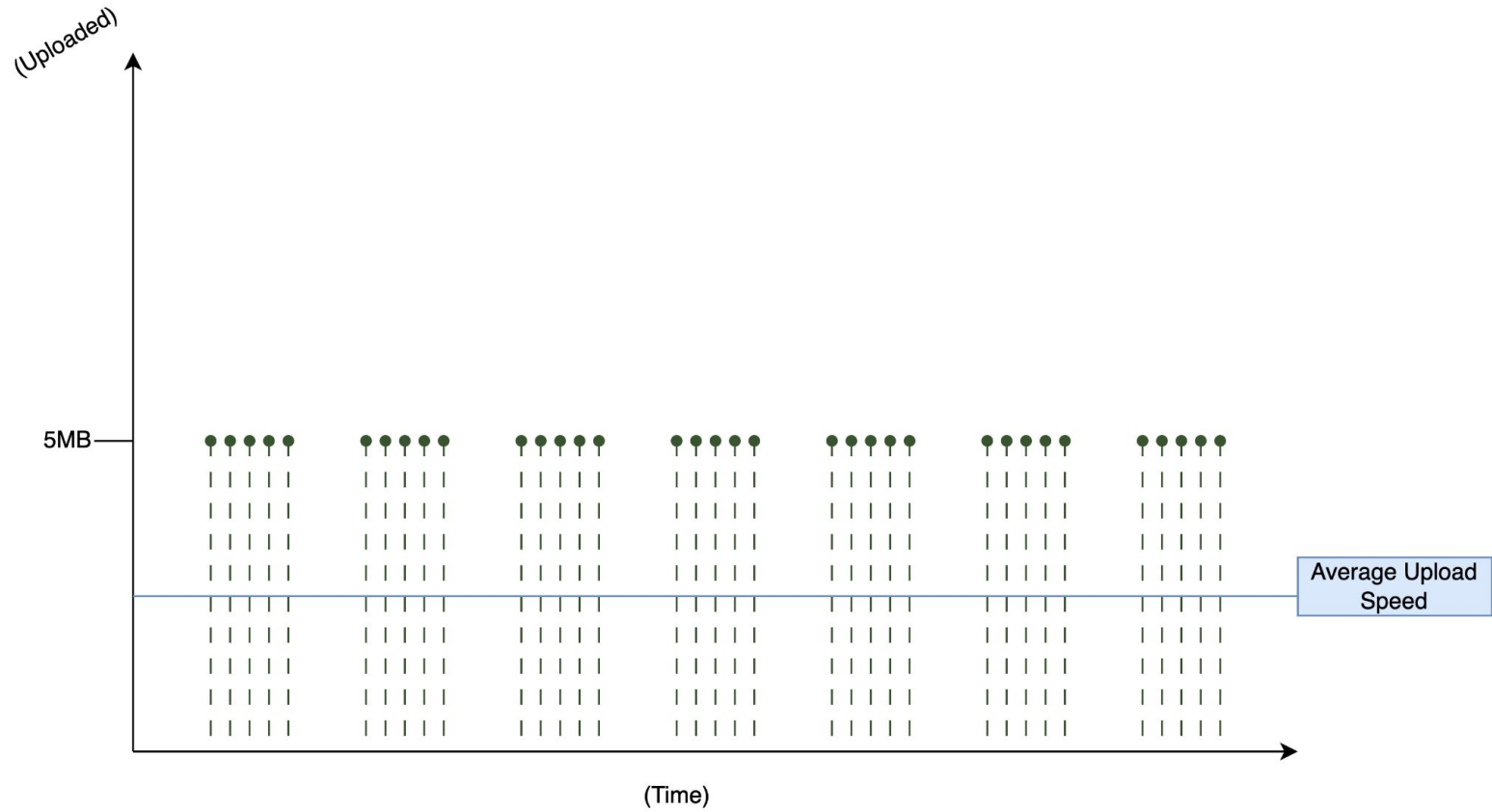


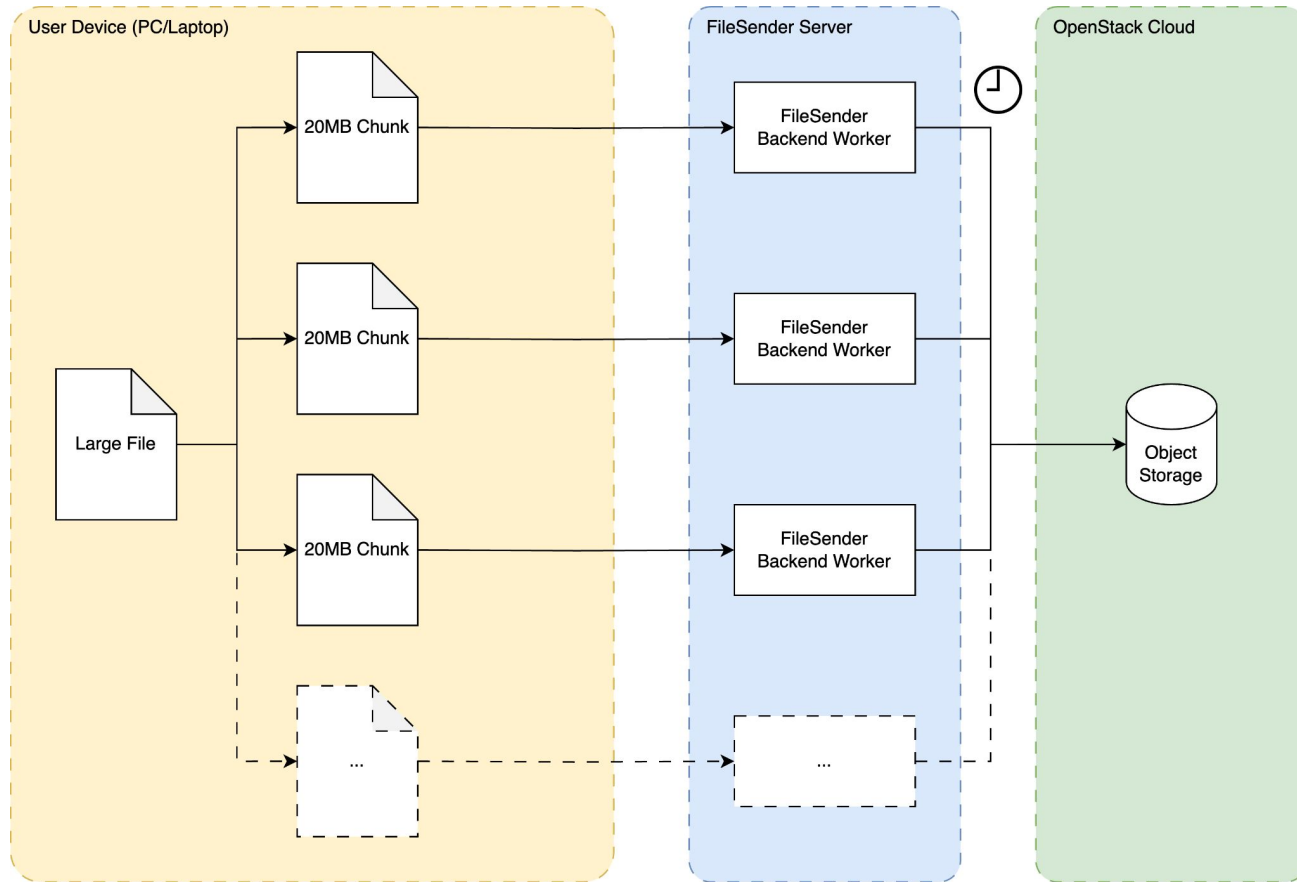


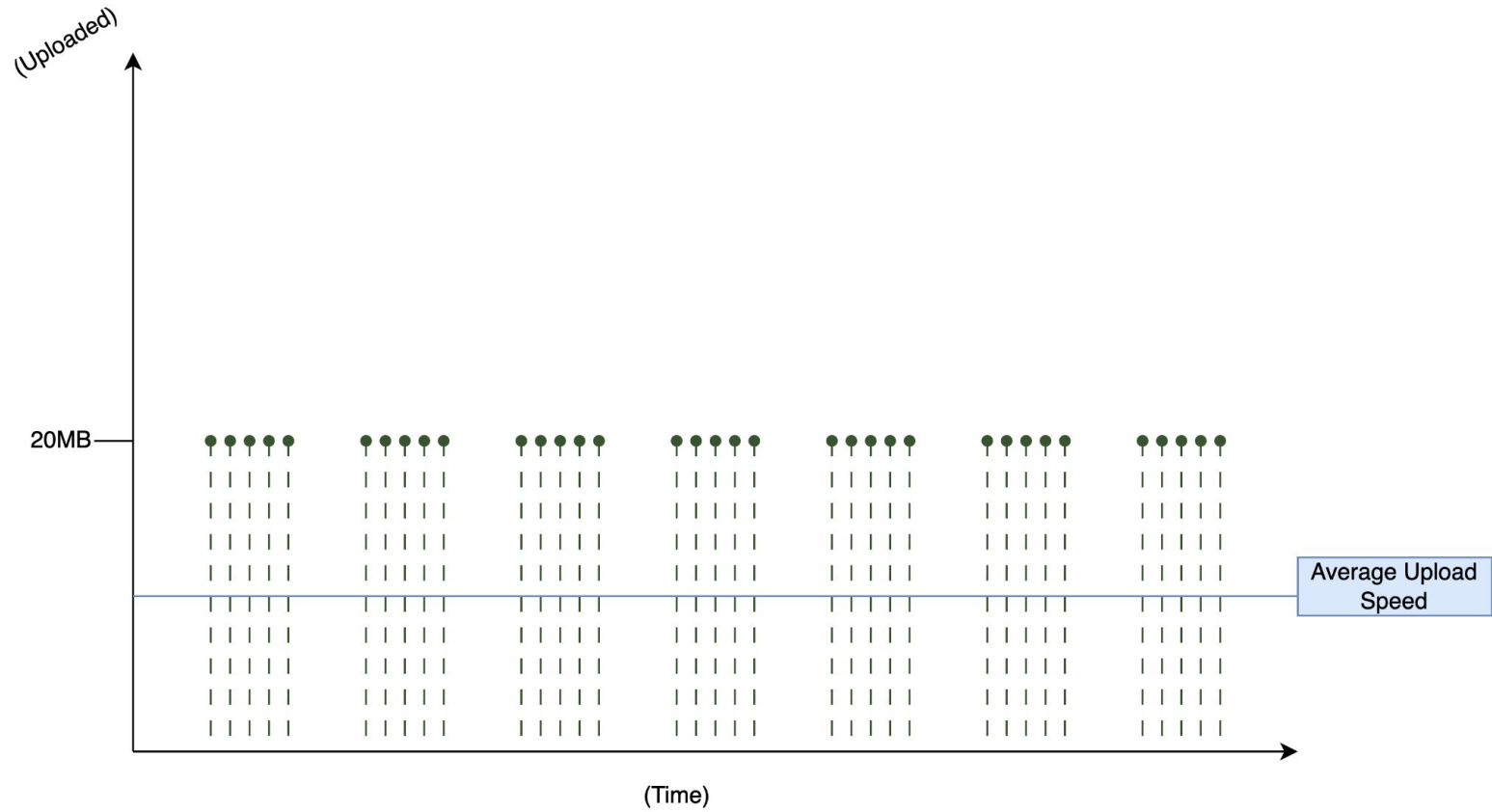


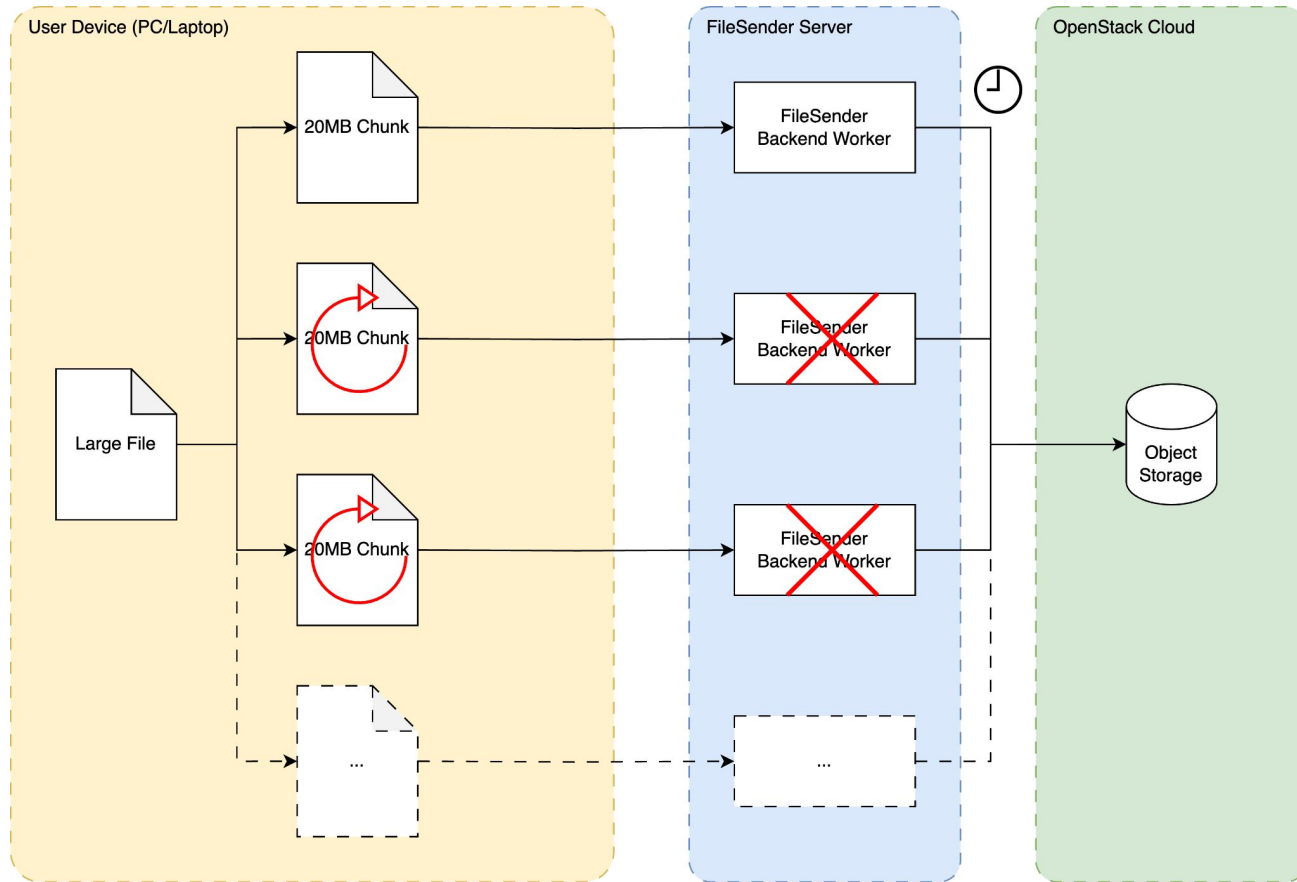


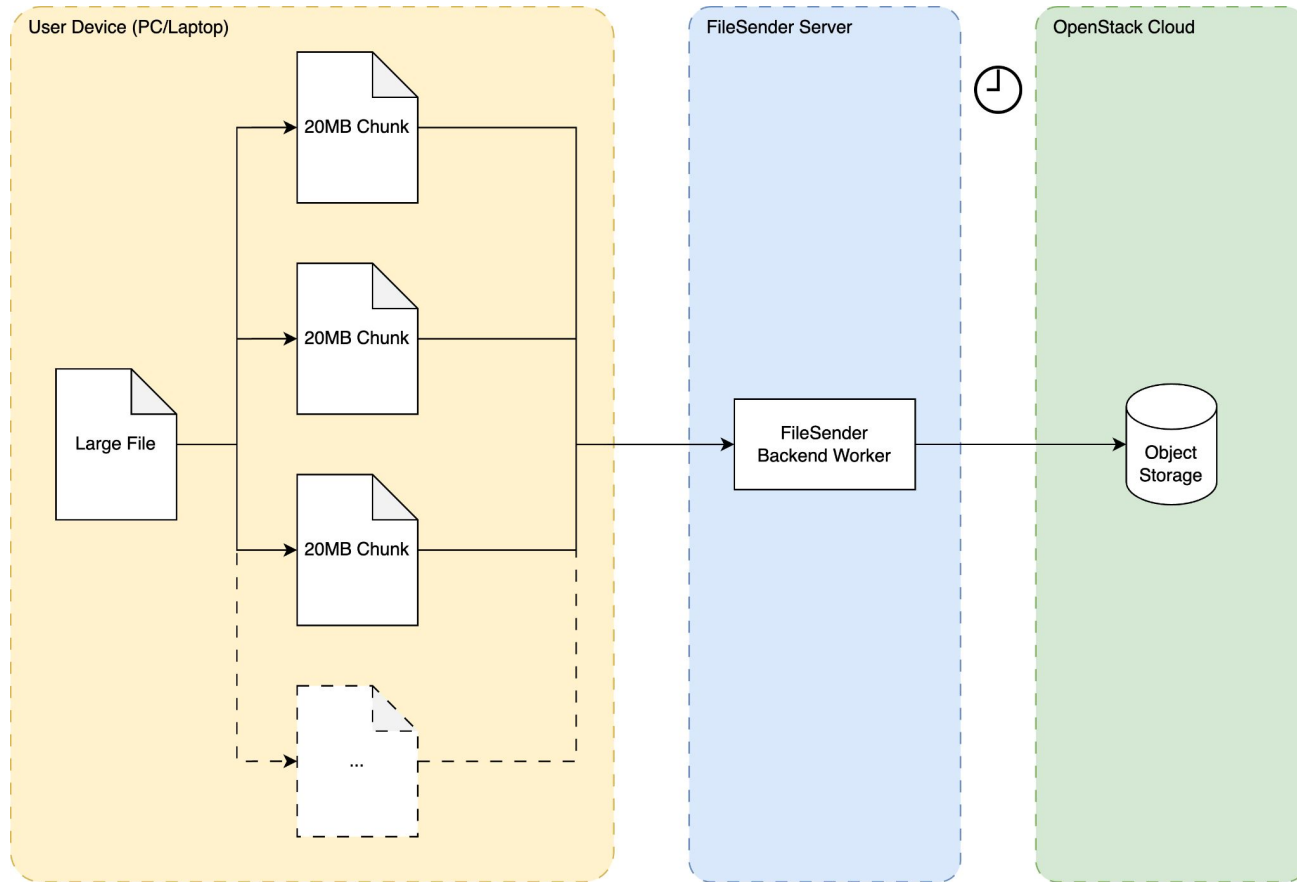


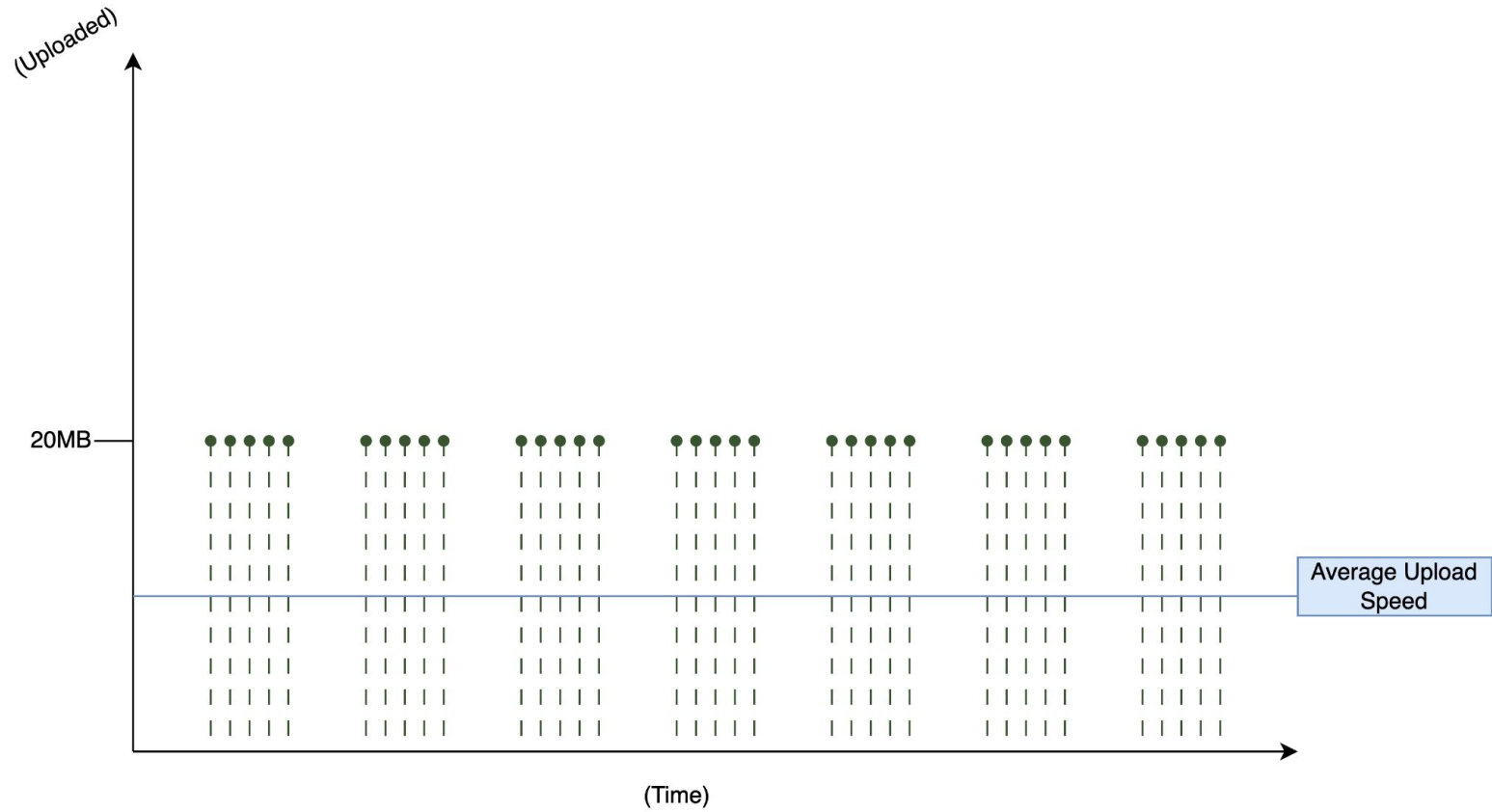


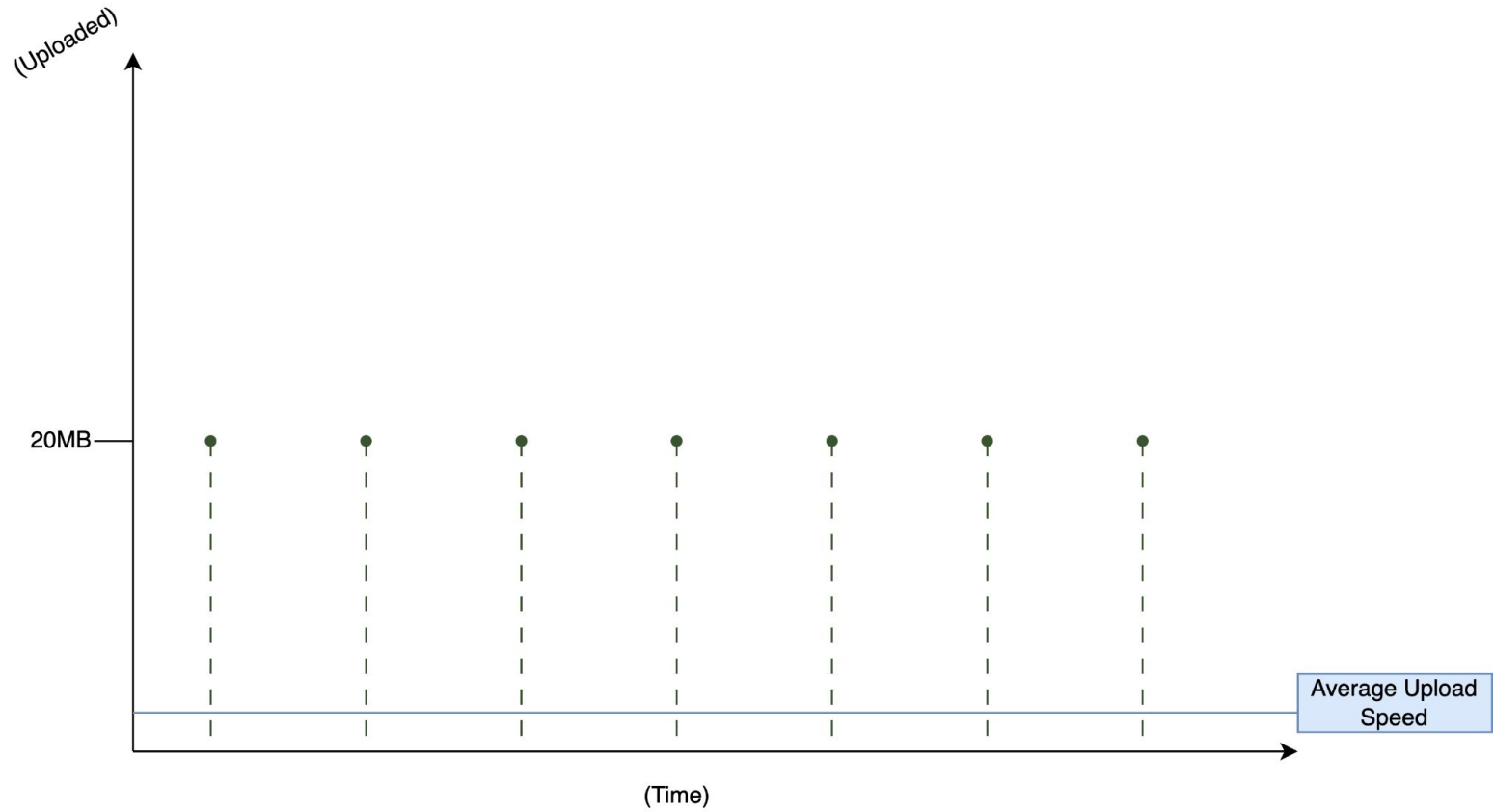


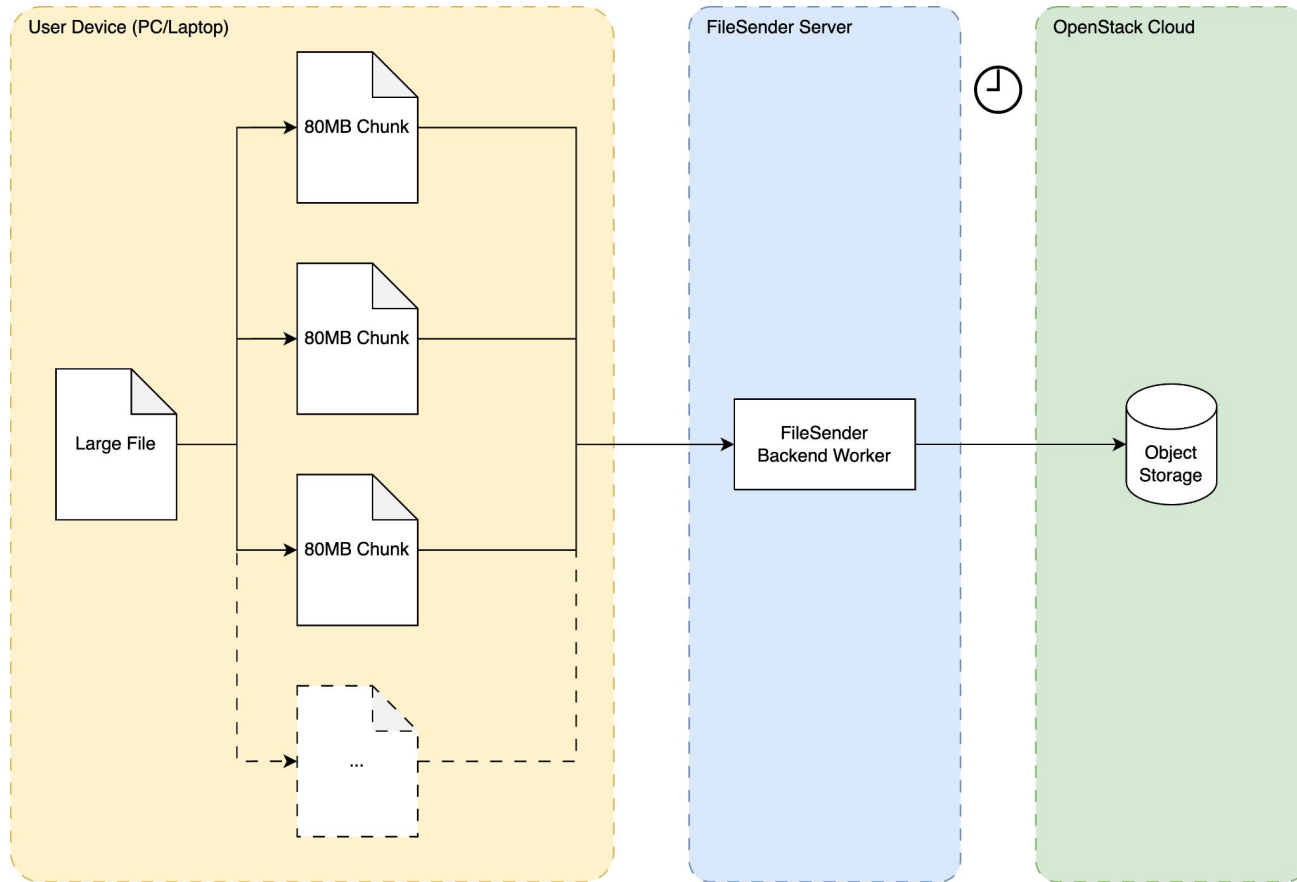


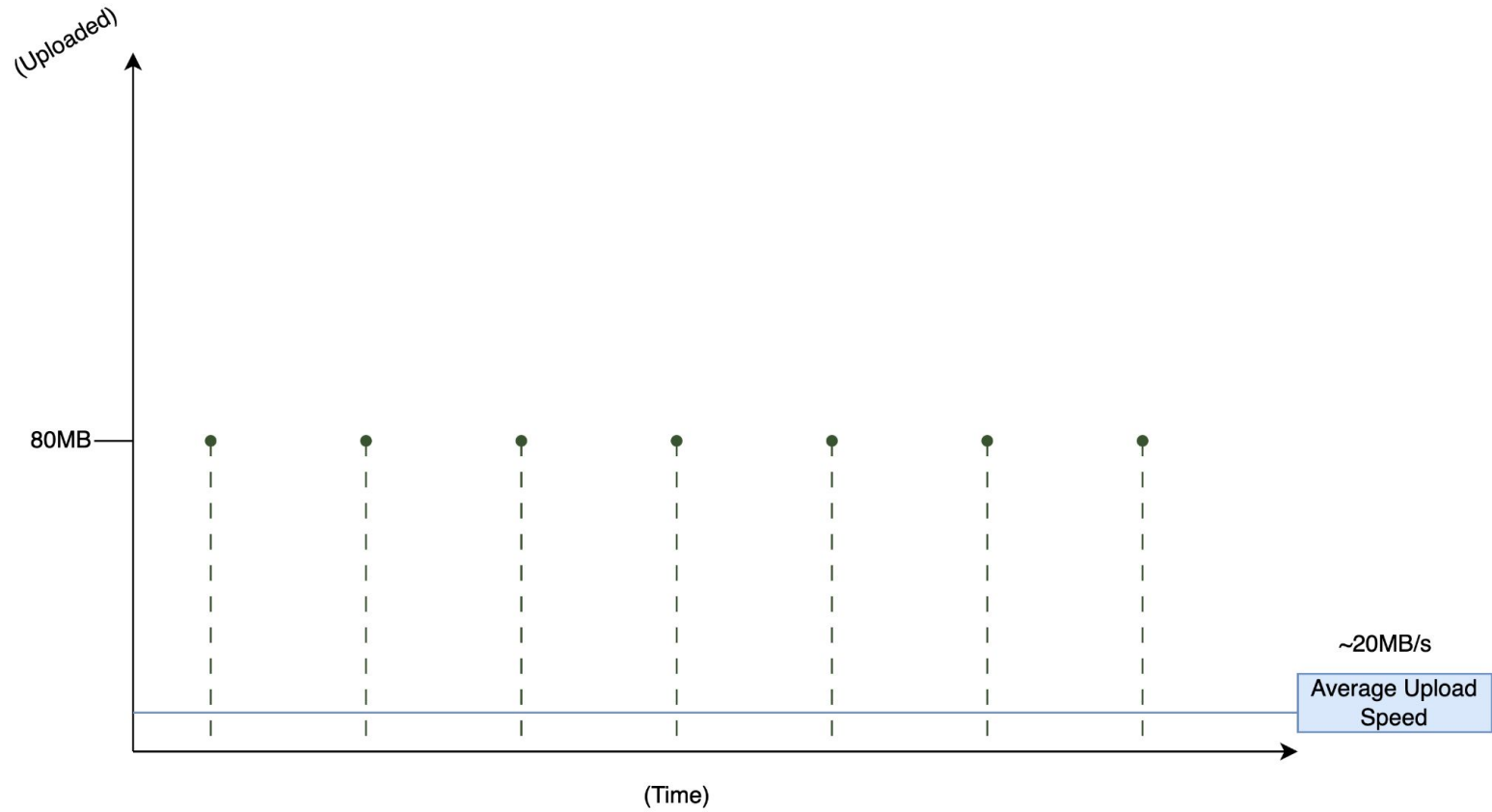








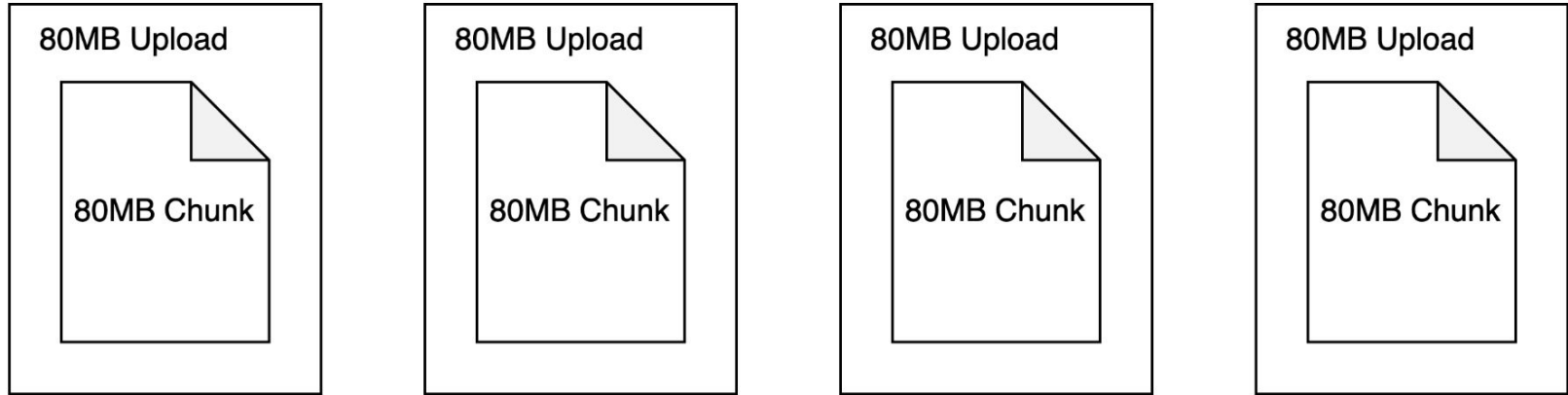




80MB Upload

80MB Chunk

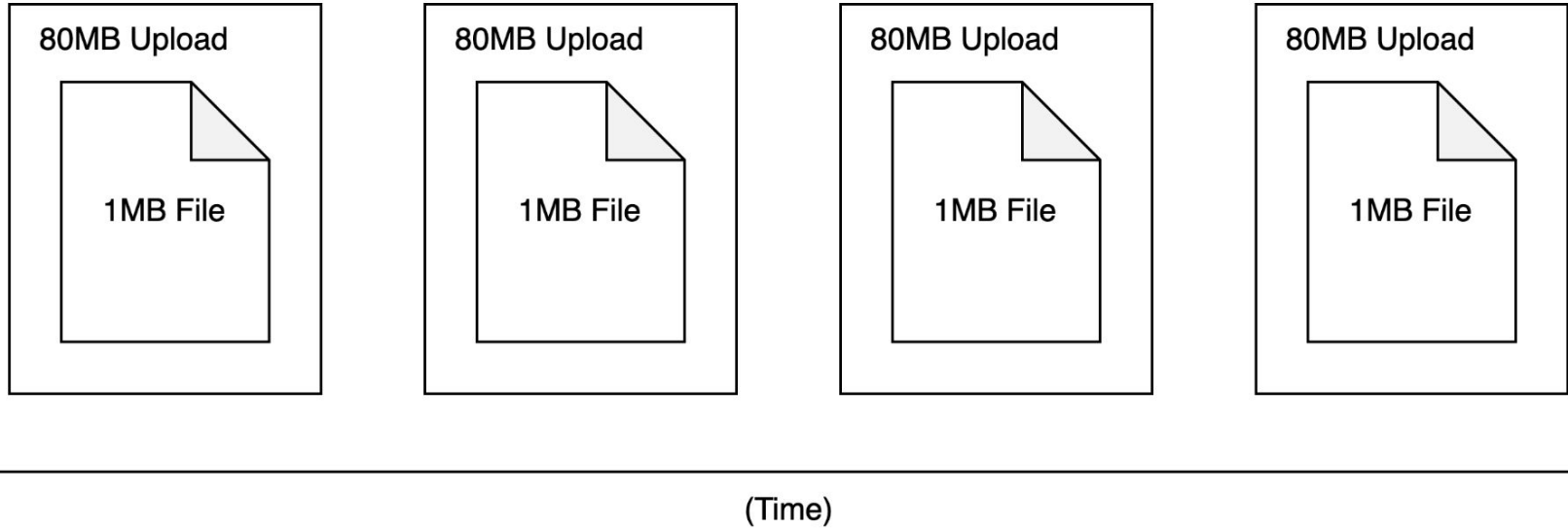
Optimal Performance ✓

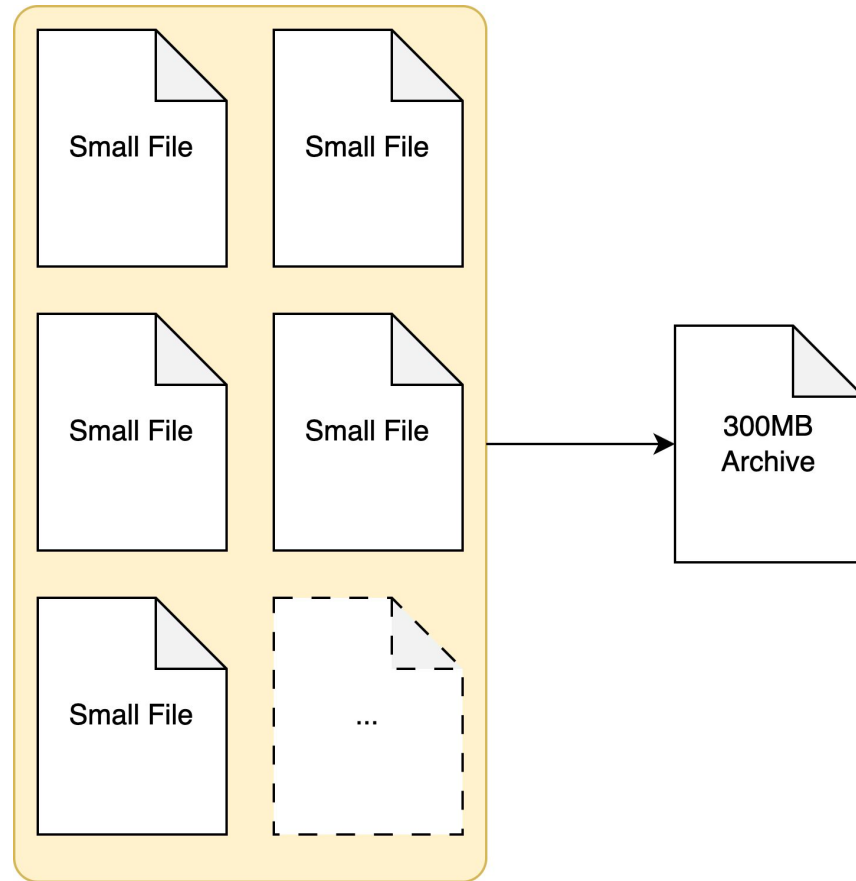


80MB Upload

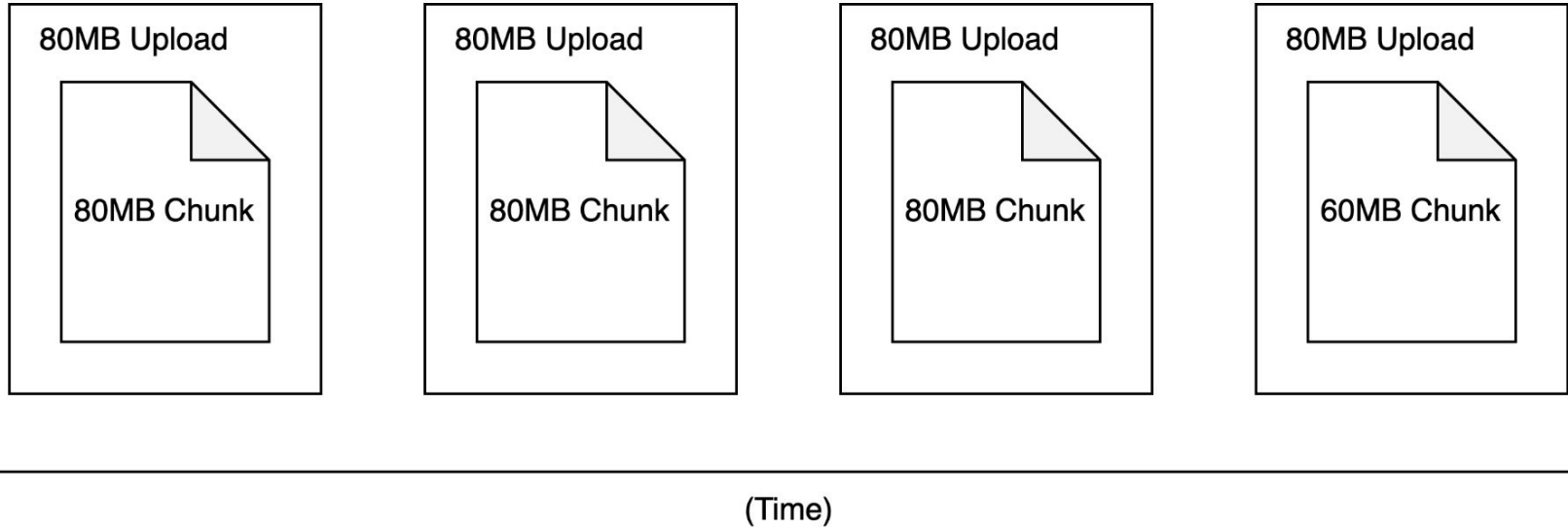
1MB File

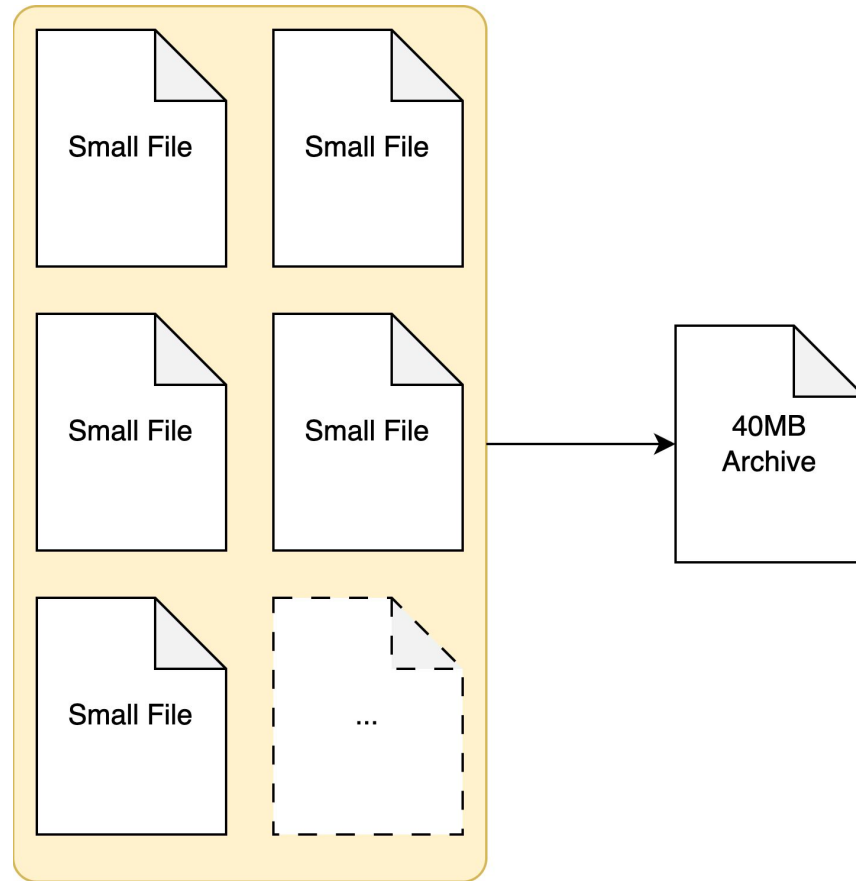
Suboptimal Performance



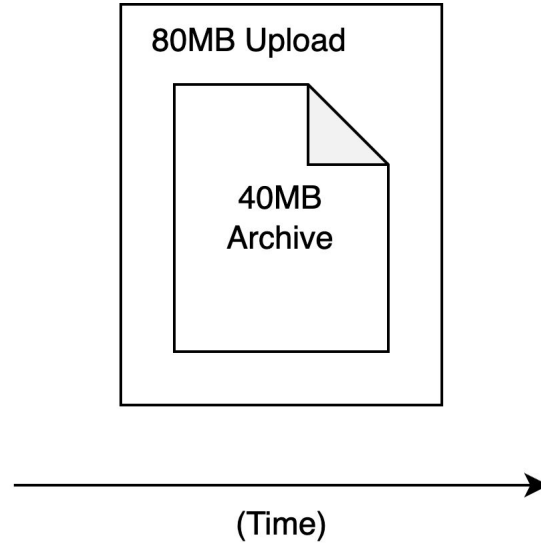


Optimal Performance ✓



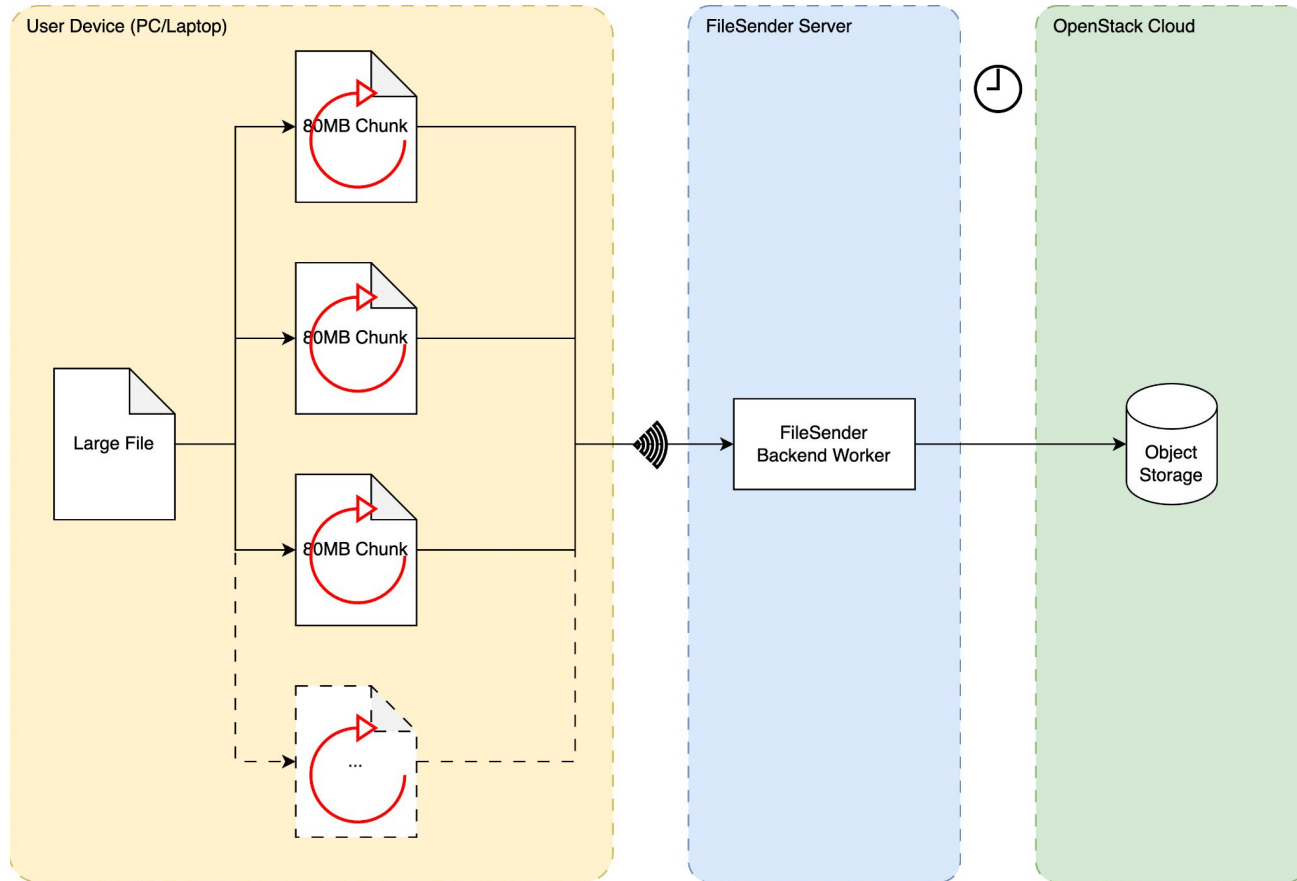


Optimal Performance ✓



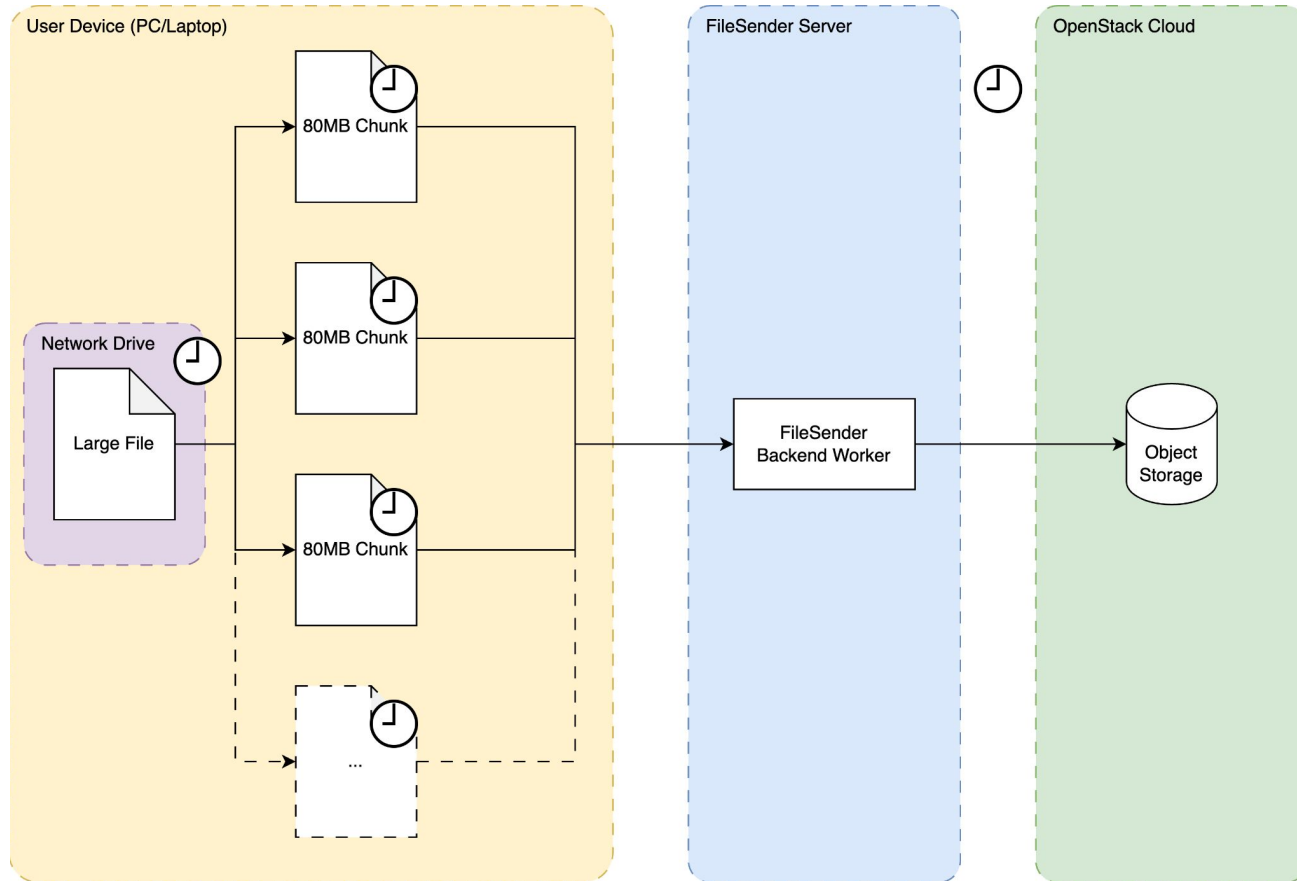
REANNZ FileSender Best Practices

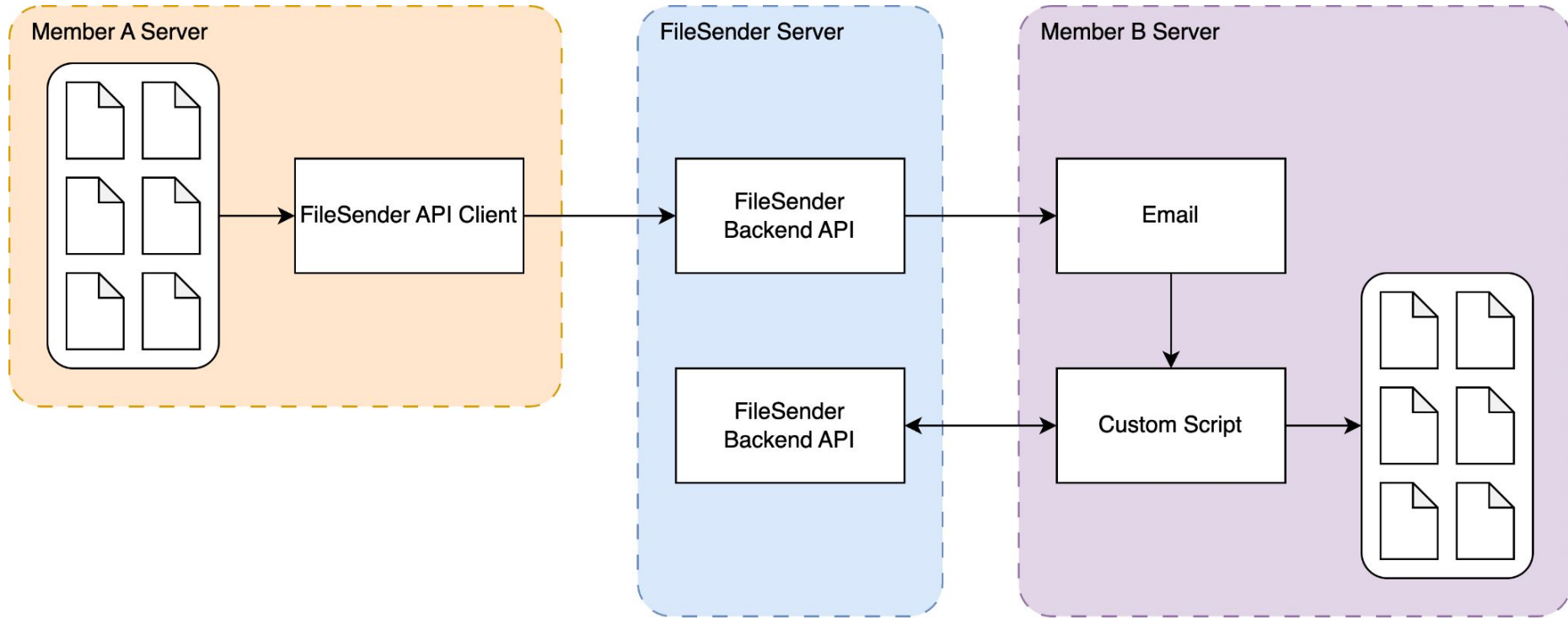
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- Share links are more reliable.
- Archive small files.
- Use a wired connection.



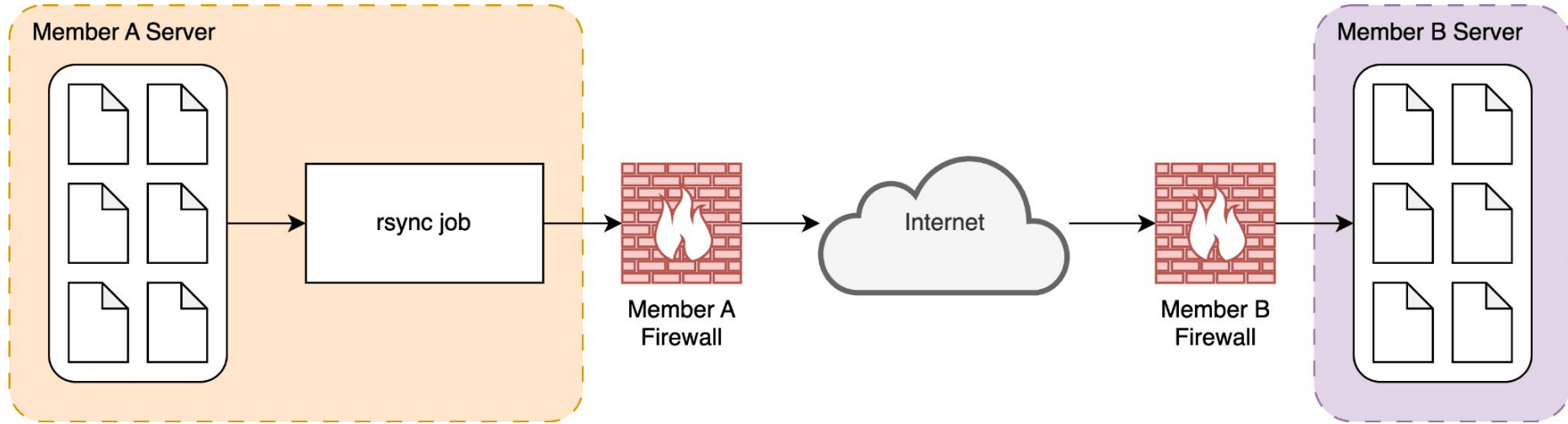
REANNZ FileSender Best Practices

- Know when to use encryption.
- Review security and file handling policies/guidelines.
- Share links are more reliable.
- Archive small files.
- Use a wired connection.
- Don't upload off a network drive.





Stargazing





Waipapa
Taumata Rau
University
of Auckland

REANNZ

Any Questions?

<https://filesender.reannz.co.nz>

