OPENING THE RESEARCH DATA FLOODGATES

eResearch Australasia

19th October, 2018,

Brett Rosolen, David Wilde, Warrick Mitchell, Chris Myers

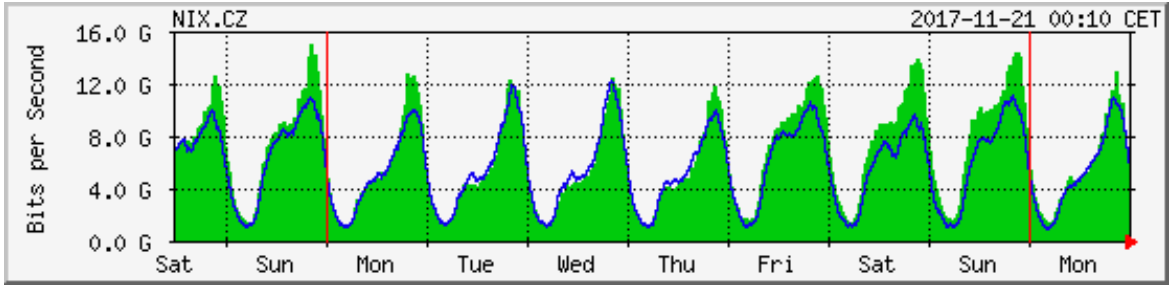
Alaskan Senator Ted Stevens

“Ten movies streaming across that, that Internet, and what happens to your own personal Internet? I just the other day got… an Internet was sent by my staff at 10 o'clock in the morning on Friday. I got it yesterday [Tuesday]. Why? Because it got tangled up with all these things going on the Internet commercially…

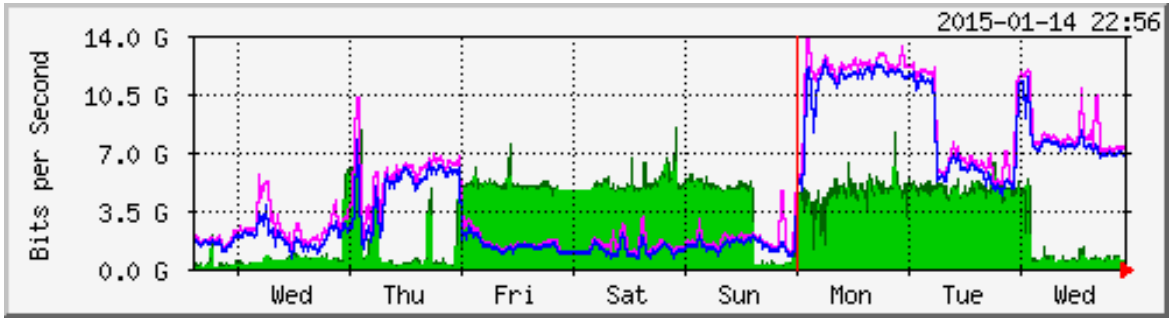
…They want to deliver vast amounts of information over the Internet. And again, the Internet is not something that you just dump something on. **It's not a big truck. It's a series of tubes**. And if you don't understand, those tubes can be filled and if they are filled, when you put your message in, it gets in line and it's going to be delayed by anyone that puts into that tube enormous amounts of material.”

WHAT DOES “R&E USE” LOOK LIKE?

Commercial Networks



Research & Education Networks



QUESTION…

Who wants to talk about the network?

ANSWER…

No-one – it's all about *data* and how to:

1) **Move it**
2) **Store it**
3) **Manage it**

ANSWER…

No-one – it's all about *data* and how to:

1) **Move it**
2) **Store it**
3) **Manage it**

SCIENCE DRIVERS

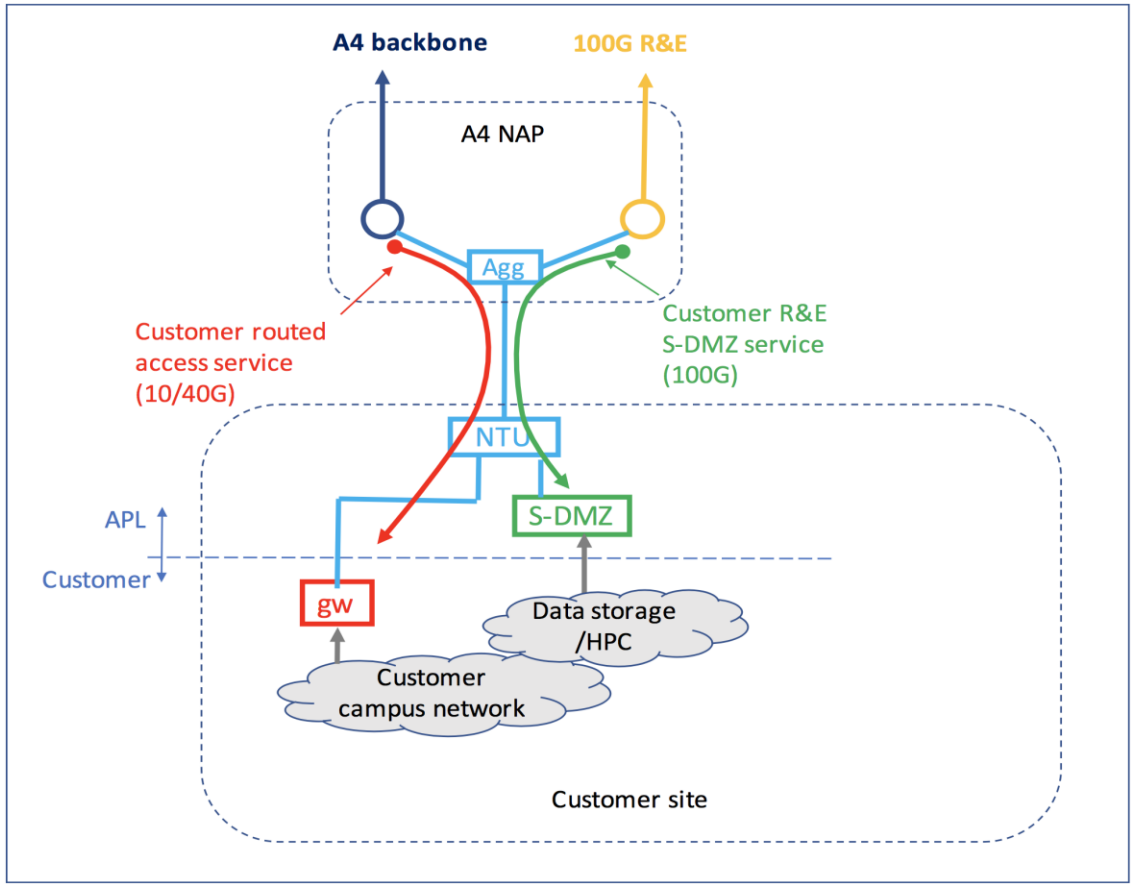
TIME TO MOVE DATA

	1 TB	10TB	100TB	1PB
100 Mbps	1 day	10 days	3 months	3.4 years
1 Gbps	2.5 hours	1 day	10 days	3 months
10 Gbps	13 min	2.5 hours	1 day	10 days
100 Gbps	< 2 min	13 min	2.5 hours	1 day

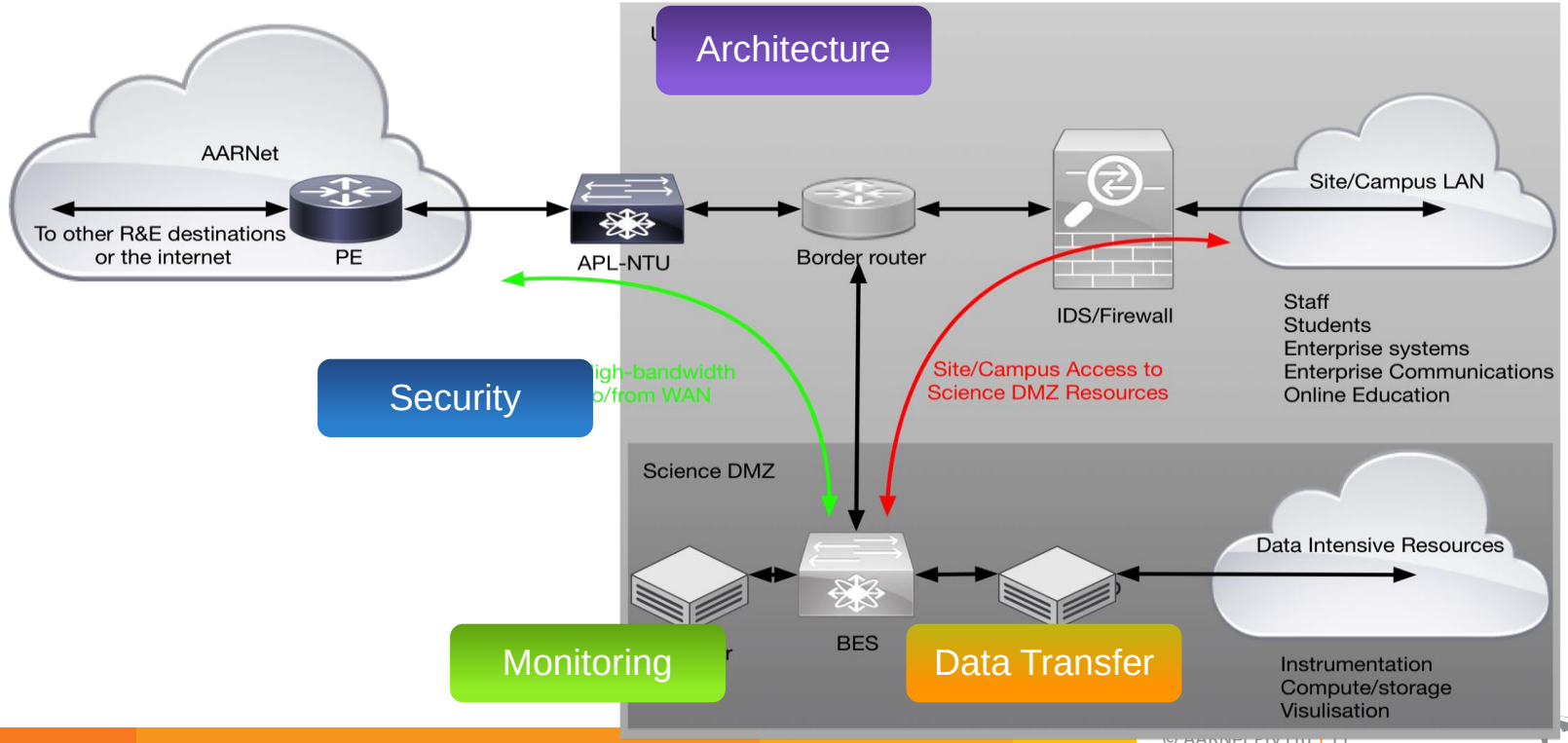
WHAT'S THE PROBLEM / OPPORTUNITY ?

aarnet

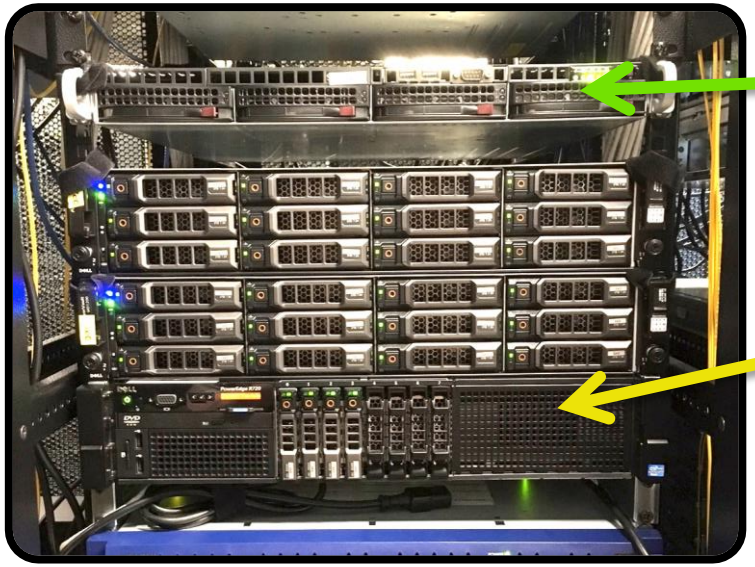
AARNET X


A4 backbone
100G R&E
A4 NAP
Agg
Customer routed
access service
(10/40G)
Customer R&E
S-DMZ service
(100G)
NTU
APL
Customer
S-DMZ
gw
Data storage
/HPC
Customer
campus network
Customer site

SCIENCE DMZ


Architecture
AARNet
To other R&E destinations
or the internet
PE
APL-NTU
Border router
IDS/Firewall
Site/Campus LAN
Staff
Students
Enterprise systems
Enterprise Communications
Online Education
Security
igh-bandwidth
o/from WAN
Site/Campus Access to
Science DMZ Resources
Science DMZ
BES
Data Intensive Resources
Monitoring
Data Transfer
Instrumentation
Compute/storage
Visulisation

BENCHMARKING DEPLOYMENTS



Monitoring

Data Transfer Node

2 x AARNet4 ScienceDMZ benchmarking deployments, capable of performing data transfer tests at 10Gbps

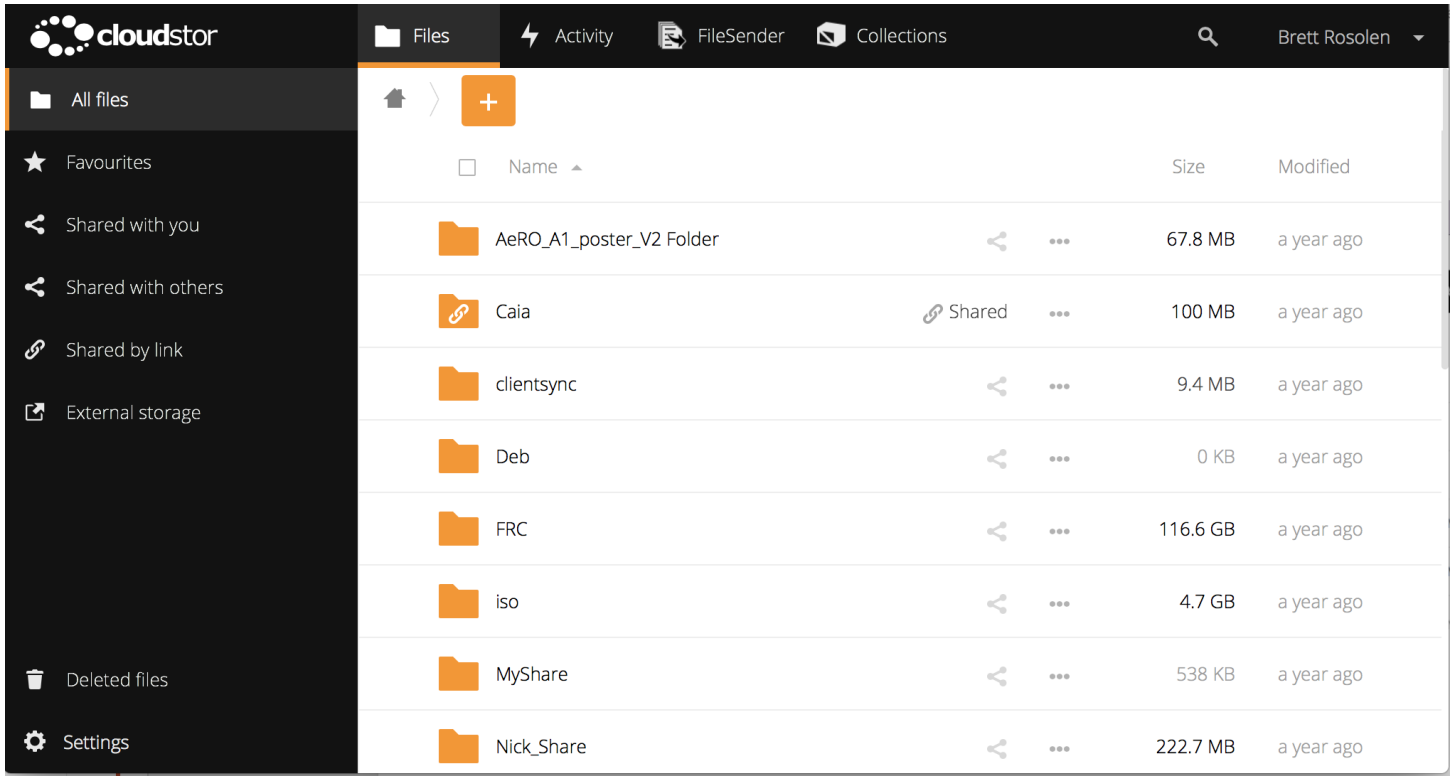
DEMONSTRATION

ANSWER…

No-one – it's all about *data* and how to:

1) Move it
2) Store it
3) Manage it

CLOUDSTOR



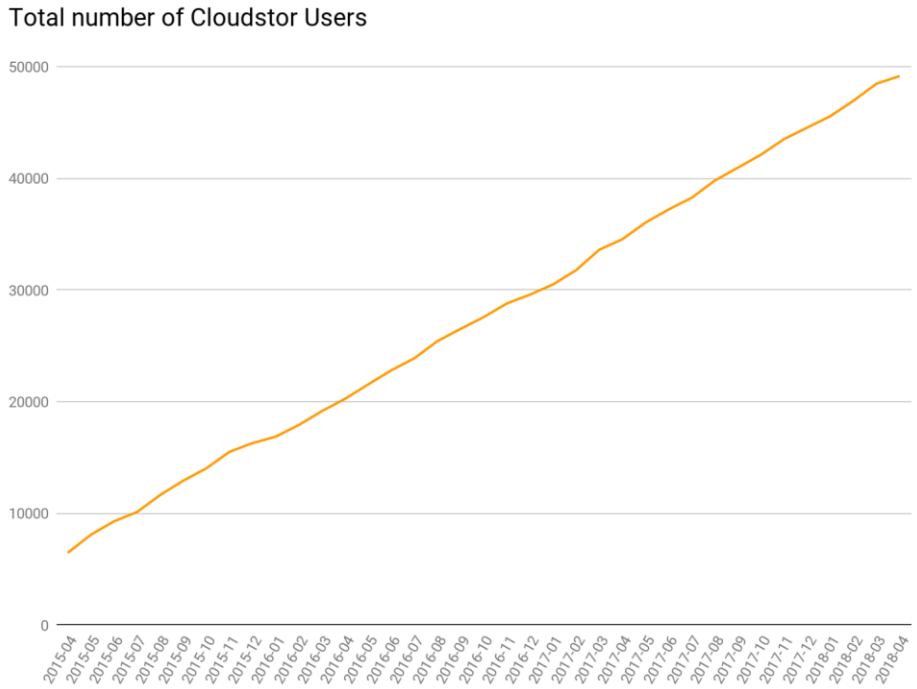
aarnet

CLOUDSTOR

Users
49,000+

Domains
333

Storage Used
275+ TB



*Latest data as of 2018-04-17

© AARNet Pty Ltd |

SUSTAINABLE STORAGE

Included in AARNet subscription
(no additional charge)

Research & staff members

100GB per researcher

10TB per institution for groups

Institutional Charge

Based on storage used by institution

Available to all staff & students

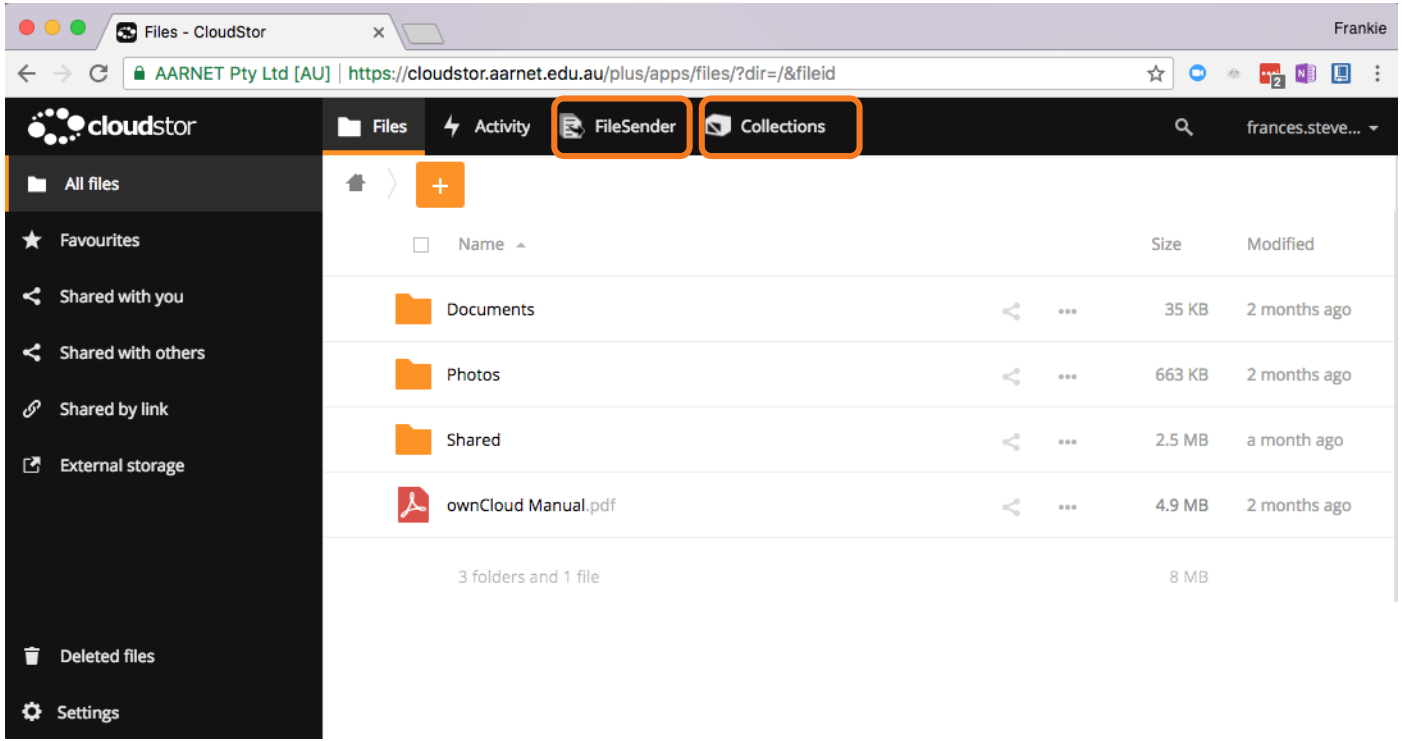
Unrestricted Storage

ANSWER…

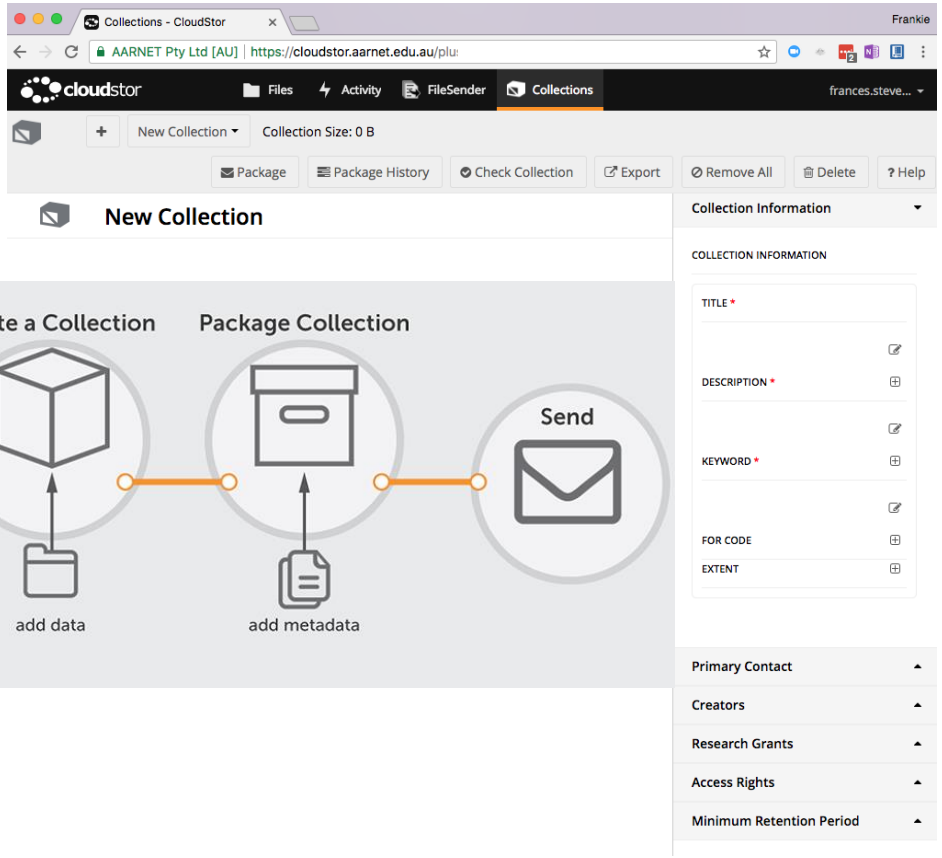
No-one – it's all about *data* and how to:

1) Move it
2) Store it
3) Manage it

CLOUDSTOR


Files - CloudStor
Frankie
AARNET Pty Ltd [AU] | https://cloudstor.aarnet.edu.au/plus/apps/files/?dir=/&fileid
cloudstor
Files
Activity
FileSender
Collections
frances.steve...
All files
Favourites
Shared with you
Shared with others
Shared by link
External storage
Deleted files
Settings
Name
Size
Modified
Documents
35 KB
2 months ago
Photos
663 KB
2 months ago
Shared
2.5 MB
a month ago
ownCloud Manual.pdf
4.9 MB
2 months ago
3 folders and 1 file
8 MB

COLLECTIONS

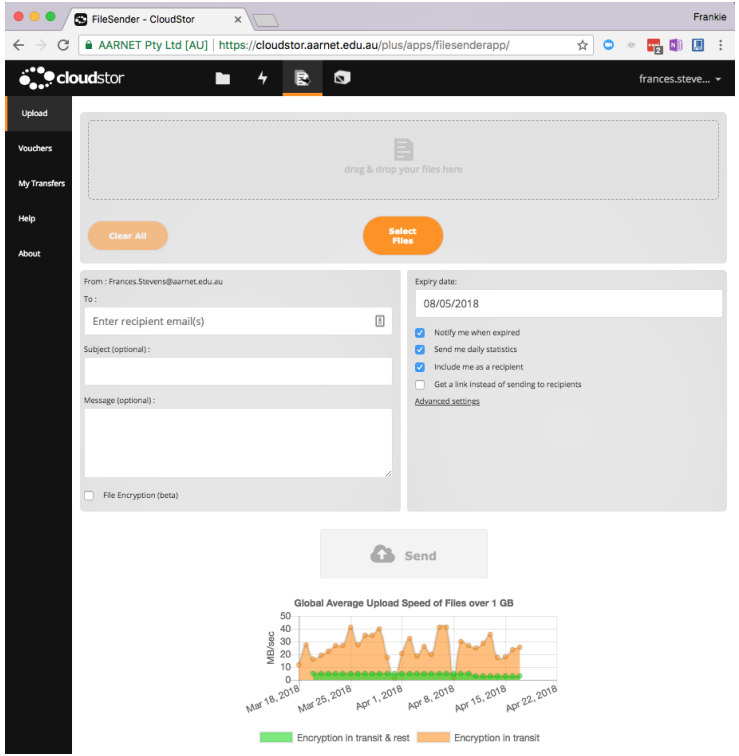


FILESENDER

Users
43,800+

Domains
226

Files sent
561,000+



Questions

THANK YOU