R2R @ Sea
Research Vessel *Sikuliaq*

Julian Race

R/V *Sikuliaq*
IT Manager

University of Alaska Fairbanks
College of Fisheries and
Ocean Sciences

j.race@alaska.edu

R2R
ROLLING DECK TO REPOSITORY

UAF COLLEGE OF FISHERIES AND OCEAN SCIENCES
University of Alaska Fairbanks

NSF

R/V *Sikuliaq*

R2R Data Flow

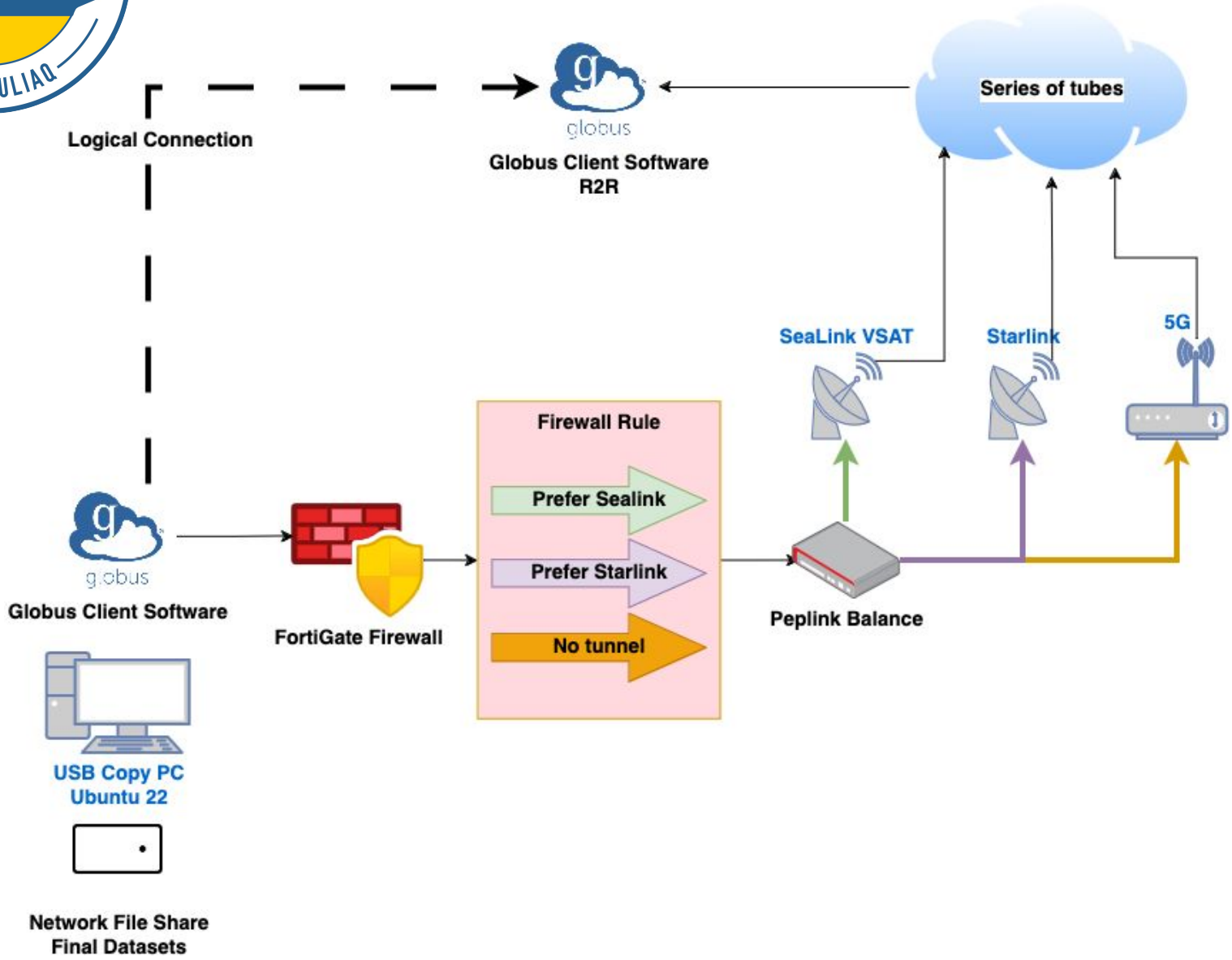
Sending datasets to shore direct from the vessel
Enabling rapid At Sea Data Collection -> Repository

Method:

- Globus Client on PC onboard
- Dataset mounted to a read-only data drive
- Push initiated from Cloud interface, R2R notified of inbound data
- Dataset trickles up to R2R as bandwidth allows
    - FortiGate rules + Traffic Shaping lets us use idle SeaLink

R/V *Sikuliaq*

R2R Data Flow



R/V *Sikuliaq*

Gotchas and Takeaways

- SSO Logins are great, but asks to log in a lot
- R2R doesn't have visibility of the transfer progress
- Transfer is routinely ~110%+ of dataset size
- No easy bandwidth limiting - do it in FG.
  - Varies by WAN connection (Starlink vs 5G vs Sealink)
- Good interface, allows managing data flows from multiple sources (shp, Seward, Fairbanks, etc)
- Bandwidth hungry! Will eat your WAN if you let it
- Overall- excellent use of high bandwidth links or idle VSAT time to replace sneakernet
  - However- Sneakernet STILL fastest way to get data ashore for very large datasets

Lead Times

Cruise	Transfer Duration	Actual transfer size	Dataset Delivered @ R2R	Lead Time Cruise End to R2R
SKQ202413S	377GB in 10 days, 20hrs	403GB	2024-10-01	13 days
SKQ202412S	802GB in 3 days, 19hr	860GB	2024-10-04	38 days
SKQ202409S	477GB in 7 days, 22hr	512GB	2024-07-20	17 days
SKQ202407S	965GB in 12 days, 5hr	1036GB	2024-06-04	14 days
SKQ202406T	130GB in 1 day, 12hr	140GB	2024-04-23	3 days
SKQ202414T	337G in 6Hr	360GB	2024-10-22	22 days
SQK202415S	259GB in 5hr!	277GB	2024-10-22	4 days

Thanks OSU!