PO.DAAC Cloud Scenarios for SWOT

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ESIP Summer 2016

2016-07-21

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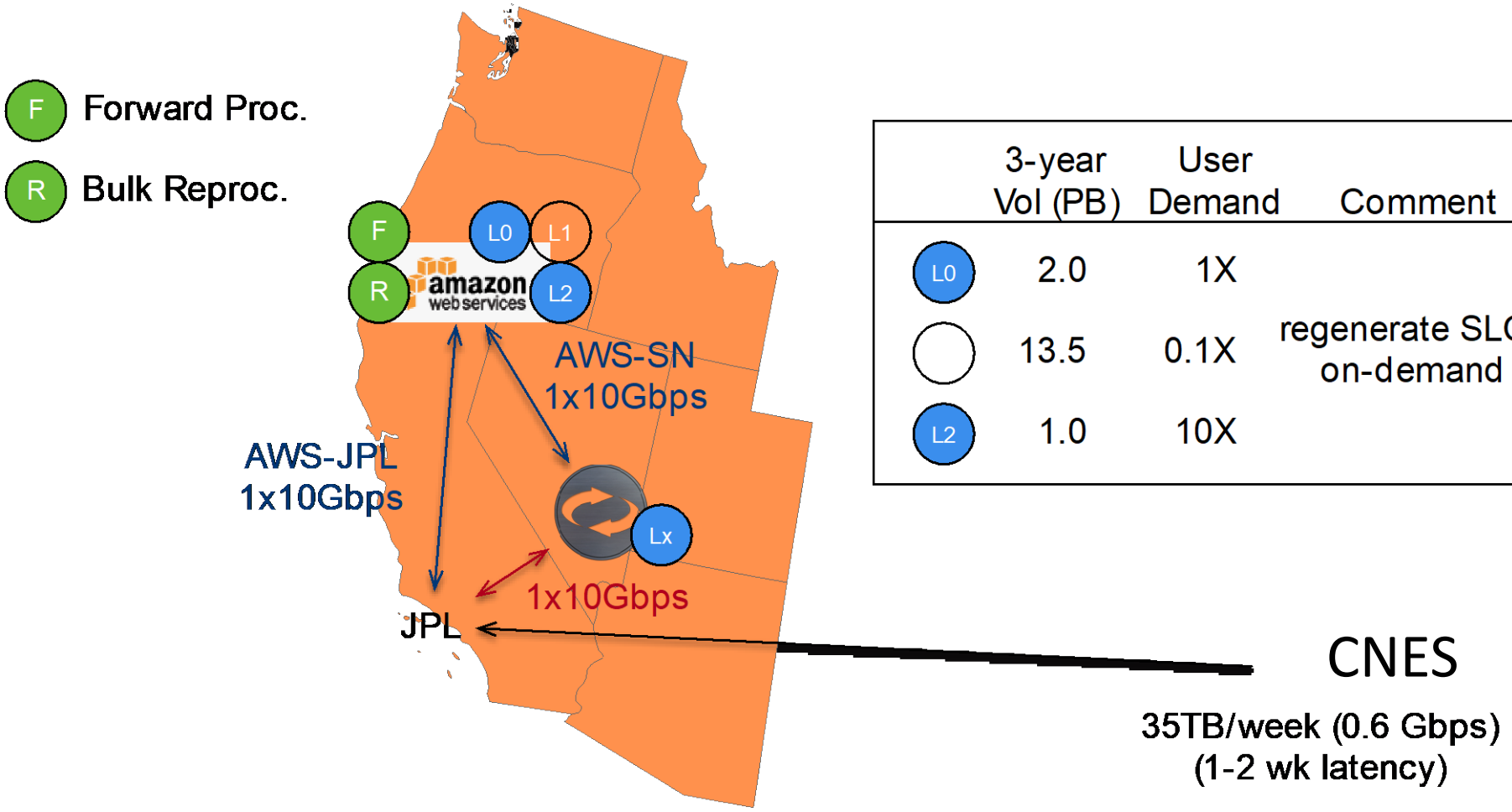
Candidate Deployment Scenario



	3-year Vol (PB)	User Demand	Comment
L0	2.0	1X	
	13.5	0.1X	regenerate SLCs on-demand
L2	1.0	10X	

Cost Considerations:

- Egress costs:
  - Users bring their algorithms to the data (behavioral change)
  - Replicate most downloaded data to external object store (e.g. SuperNAP)
    - Conceivable to simply duplicate all L2+ data to external store (helps with multiple copy requirement)
- Regenerate large, rarely-accessed products on-demand
  - Huge cost savings with some added complexity (all previously released product versions)
- Store only latest versions after reprocessing
  - Large cost savings – but at the expense of archive completeness
    - If we can regenerate previous versions, then everybody wins
- Use highly aggressive storage lifecycle management
  - Hottest X% of data in S3; the rest in S3-IA or Glacier (X to be tuned over time)
  - Monitor hazard feeds and pre-promote data in selected areas

PO.DAAC Solution May Change Over Time:

- The solution PO.DAAC implements <u>may</u> <u>change</u> over time, because:
  - The egress costs are effectively unbounded, and
  - Archive storage doesn’t scale like compute
- The “best” solution changes depending on:
  - when you ask the question; and to whom
  - what you value most, therefore:
- PO.DAAC needs a malleable solution, one that can migrate over time
- PO.DAAC is looking to “buy time”™