Amazon Glacier
Why to use it, When to use it, and What it will cost you

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What is Glacier

- Cloud storage service
- Provided by Amazon Web Services
- Designed for:
  - Low cost
  - Low access rates
  - Long retention periods
Why Glacier?

• Scalable
  – Virtually unlimited storage capacity

• Flexible
  – Use (and pay for) as much as you need

• Secure
  – Claimed durability of 99.999999999%
  – Auto data integrity checks and self-healing
  – SSL transfer, encrypted at rest

• CHEAP: $0.01 per GB per month
Storage Fee
$0.01 per GB per month
Transfer Fee

• Same as S3
• Only for outbound transfer
• Tiered:

<table>
<thead>
<tr>
<th>Data Range</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 10 TB</td>
<td>$0.12</td>
</tr>
<tr>
<td>10 to 40 TB</td>
<td>$0.09</td>
</tr>
<tr>
<td>40 to 100 TB</td>
<td>$0.07</td>
</tr>
<tr>
<td>100 to 350 TB</td>
<td>$0.05</td>
</tr>
</tbody>
</table>

Transferring out all content one time is always <= 1 year storage fee
Retrieval Fee

\[(R/T - (S \times 0.05/30/min[T, 24]))) \times 0.01 \times 720\]

\(S = \) Total amount of data stored (GB)
\(R = \) Total amount of data retrieved (GB)
\(T = \) Time period over which data is retrieved (hours)
Time Matters

Full Restore of 100 TB

Cost ($)

Retrieval Period (Days)
When NOT To Use Glacier

- Data that you may need immediately
  - Retrieval delay of 3-5 hours
- Data that needs to be accessed often
- Data which will be deleted quickly
  - Fees for deletion of files stored < 90 days
When To Use Glacier

- Archival data
  - Write once, read rarely
- Disaster recovery
  - Budget 3x annual storage cost
- Tape replacement
Total Cost

100 TB Stored - Full Retrieval Once per Year

- **Storage**: $92,340
- **Retrieval (3 days)**: $10,188
- **Transfer**: $8,500

**Annual Cost ($)**

- S3: $8,500
- Glacier: $12,288

($110,000 total cost)
How To Use Glacier

• Direct via APIs
  – Vaults and Archives

• Amazon S3 integration
  – Lifecycle policies

• DuraCloud integration
  – Automatic duplication
  – Assistance with retrieval
Thanks!

Questions?
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