Cost Comparison: Azure Cosmos DB vs MongoDB Atlas

# 1. Workload Summary

- Jobs per day: 1,400  
- Records per job: 40,000  
- Daily records: 56 million  
- Monthly records: 1.68 billion  
- Record size: 30k at 10 KB + 10k at 1 KB → Average size ≈ 8.25 KB per record  
- Monthly data volume: ~12.4 TB

# 2. Cost Comparison Summary

|  |  |  |
| --- | --- | --- |
| Feature | Azure Cosmos DB (Provisioned RU) | MongoDB Atlas (Serverless) |
| RU/sec Required | ~8,102 RU/sec | Not applicable |
| Total Monthly Writes | 1.68 billion | 1.68 billion |
| Total Monthly Reads | ~300,000 (UI reads) | ~300,000 |
| Monthly Cost (Write + Read) | $46,667.33 | $1,680.03 |
| Monthly Data Size | ~12.4 TB | ~12.4 TB |
| Storage Cost (approx.) | $3,200 | $3,100 |
| Total Monthly Cost | $49,867.33 | $4,780.03 |

# 3. Recommendation

MongoDB Atlas is approximately 10× cheaper for your current workload.  
  
Key Points:  
- Cosmos DB’s provisioned RU model incurs high baseline costs due to required throughput reservations.  
- MongoDB Atlas follows a usage-based pricing model (per operation), offering significant cost savings.  
- Cosmos DB is ideal for globally distributed applications with SLA-backed performance on Azure.  
- MongoDB Atlas supports native MongoDB features, flexible scaling, and community support.  
  
Conclusion:  
For high-volume ingestion with moderate reads, MongoDB Atlas is more cost-efficient unless deep Azure-native integration is required.