



Rocket® Mobius Conversion Benchmark

One-billion document
benchmark test
on Amazon Web Services



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A digital workplace for the modern enterprise

Rocket® Mobius is a flexible, highly scalable, performance-oriented content services platform that ingests, parses, indexes, archives, and provides access to any type formation, at any time, and anywhere in the enterprise. It is deployable on-premises, in the cloud, or in a hybrid model.

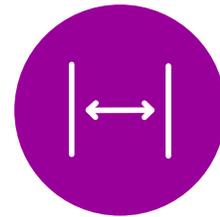
The purpose of the Rocket Mobius One Billion Document Benchmark test was to:



Demonstrate the scalability of Rocket Mobius in an Amazon Web Services (AWS) Cloud environment



Demonstrate the reliability of Rocket Mobius with ever increasing ingestion volumes



Demonstrate the performance of the horizontally scalable Rocket Mobius architecture

The benchmark test requirements were to:



Ingest, parse, archive, and index 1 billion documents in the Rocket Mobius repository.



Ingest the documents faster and with less hardware than the competition.



Provide full text indexing of ingested content.



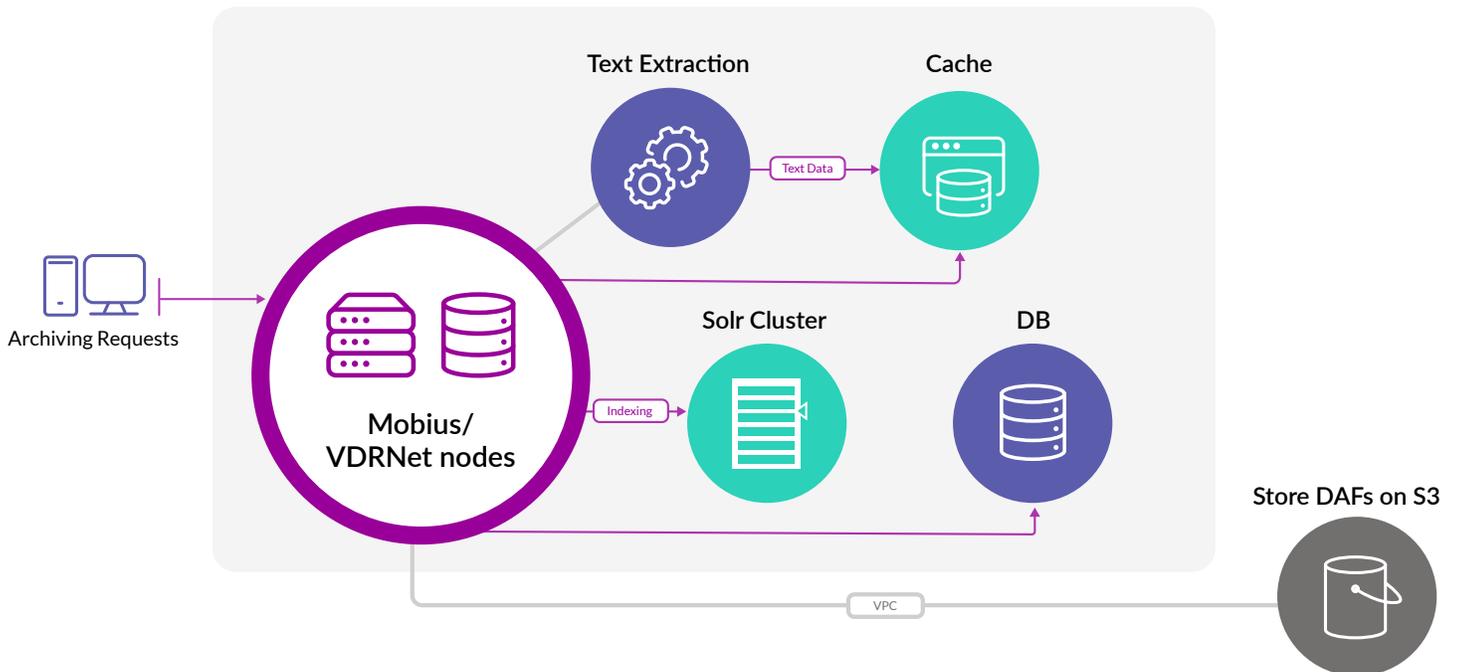
Parse text inputs to identify section and document boundaries.



Exhibit scalable and steady performance through the benchmark test.

Architecture

The following diagram shows the architecture used to deploy Rocket Mobius on AWS EC2 to ingest, parse, archive, and full text index 1 billion documents, which equaled 100 terabytes of input data.



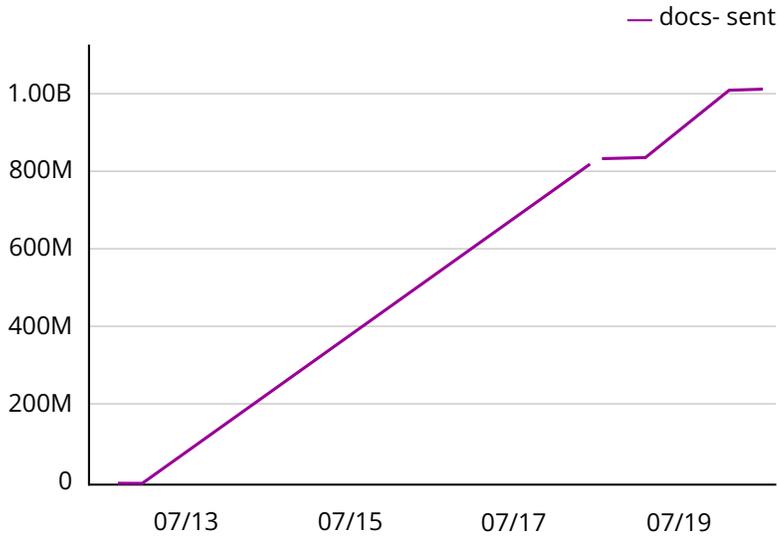
AWS CloudFormation gives developers and systems administrators an easy way to create and manage a collection of related AWS resources, provisioning and updating them in an orderly and predictable fashion.

The Amazon EC2 CloudFormation Template permits 1-click deployment of a Rocket Mobius stack:

- 8 Rocket Mobius ViewDirect Repository EC2 (c3.2xl) instances in an autoscaling stack
- 8 Apache SolrCloud EC2 (m3.2xl) instances managed by ZooKeeper (m4.l)
- AWS S3 For archive storage
- AWS RDS (r3.2xl) for database
- AWS ElastiCache (r3.4xl)

Results

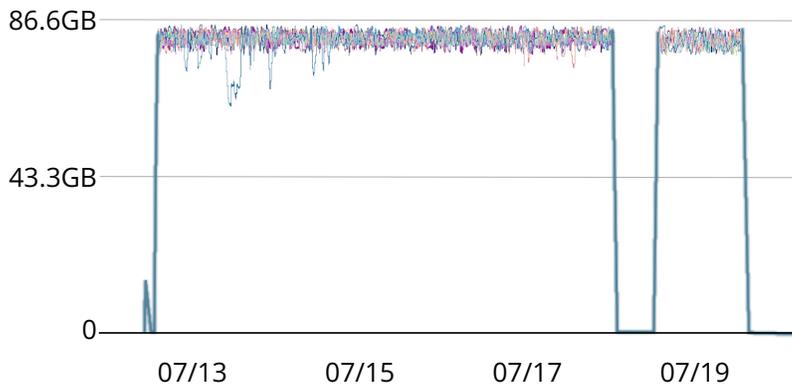
Documents Archived



Rocket Mobius ingested, parsed, and archived one billion documents that equaled 100 terabytes of information.

It delivered near real-time full text indexing, with only a 2-minute lag between archiving and full text indexing. The benchmark test was completed in 7 days and 5 hours, and Rocket Mobius exhibited steady and scalable performance.

Rocket Mobius Archiving GB/Hr



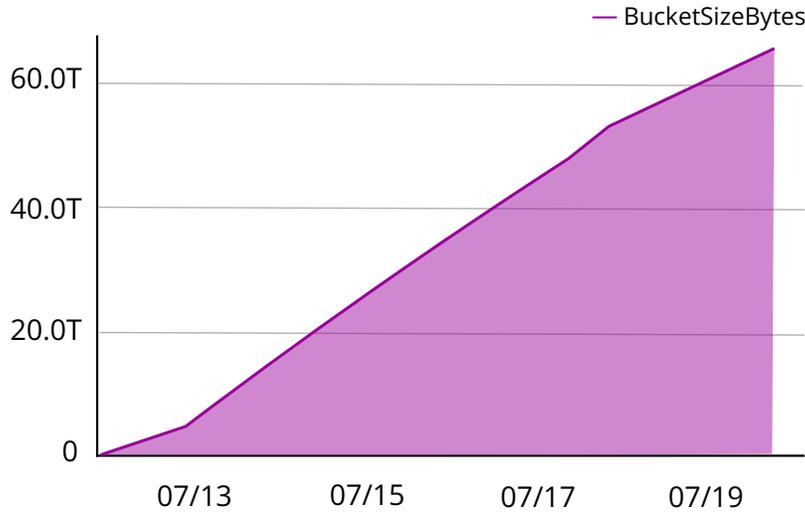
Rocket Mobius achieved maximum archiving speed quickly and was stable throughout the 7 days of testing.

The AWS EC2 instance suffered a hardware failure during the test. Rocket Mobius was not fazed by the failure; archiving was stopped, the failed hardware node was replaced, and archiving continued from where it was stopped.

- onebdoctestVDR0
- onebdoctestVDR1
- onebdoctestVDR2
- onebdoctestVDR3
- onebdoctestVDR4
- onebdoctestVDR5
- onebdoctestVDR6
- onebdoctestVDR7

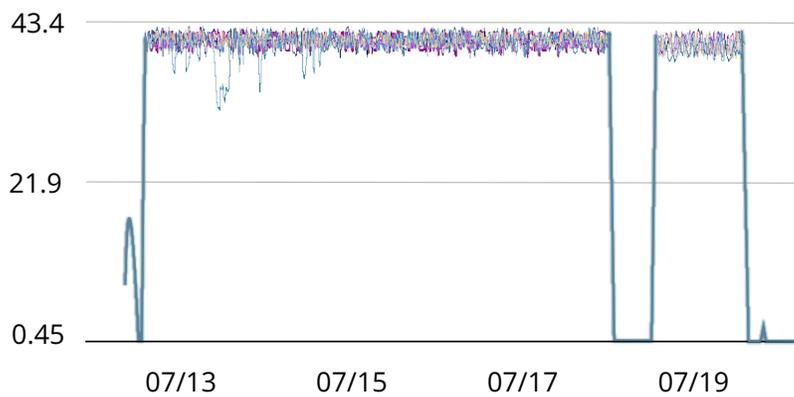
Results

Rocket Mobius DAF Storage



Rocket Mobius compression of documents for archival resulted in a 40% reduction in disk utilization, which provides additional storage cost savings on AWS S3. Performance was not hindered using standard Rocket Mobius archive compression.

Mobius CPU Utilization

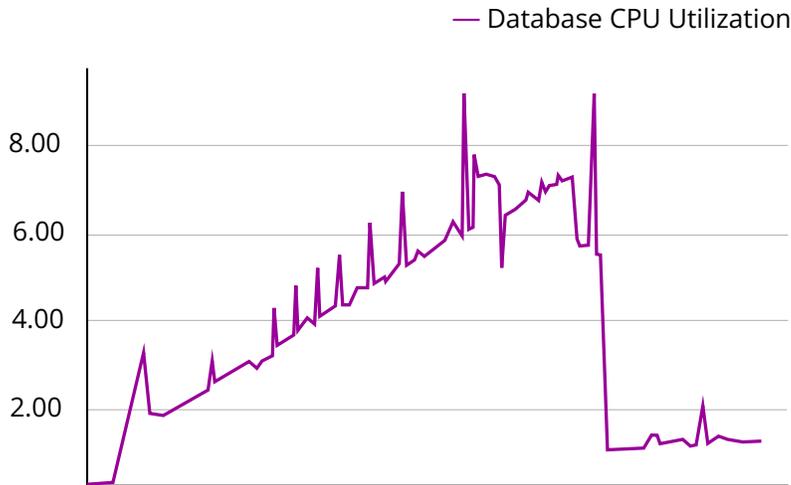


The Rocket Mobius node CPU utilization was less than 50% when using standard Rocket Mobius archive compression. Additional reduction in disk utilization without performance degradation is possible with enhanced Rocket Mobius archive compression.

- i-0c4a8d1ac63b2899a
- i-0b633e33d58fe1686
- i-0fc1e165aaf91e68e
- i-01473b48852b9b7c2
- i-0d9d79ad1c850d6fe
- i-0d83c319fdada4b2be

Results

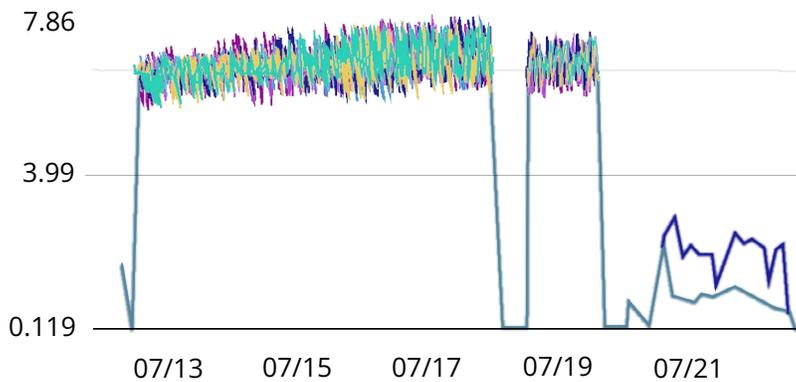
% DB CPU Utilization



Rocket Mobius Database and full text indexing CPU utilization peaked at 10%, leaving 90% of CPU capacity unused. Additional cost savings can be achieved using a lower class of machines and increasing CPU utilization without impacting performance.

Additionally, it was observed that memory utilization was lower than expected.

% Full Text CPU Utilization



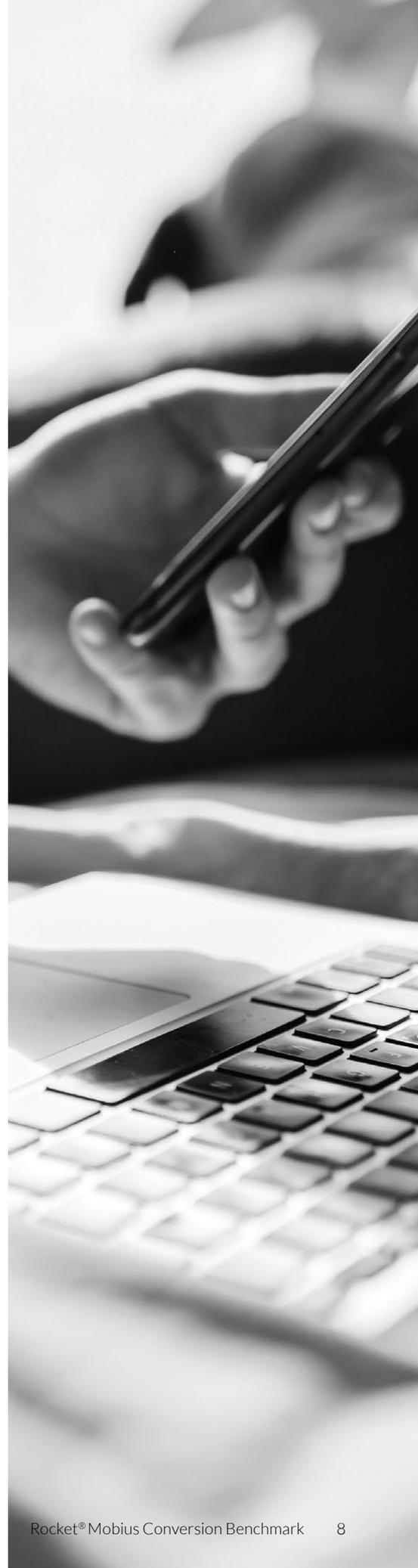
- i-09c3efeb33e0f8822
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- i-00b85401565dd456a
- i-0b2f637a3996ae582
- i-0b856c3a2bafb0e2e
- i-05725854a0dacc21a

Summary

The scalability and configurability of Rocket Mobius lets customers rightsize deployments to optimize multiple enterprise goals. In comparison to the competition's billion document deployment on AWS, the Rocket Mobius One Billion Document Benchmark test achieved a **250% faster completion time** while running on 10% fewer instances of the same hardware, with low CPU utilization on these instances.

This resulted in a **30% reduction in cost** for the benchmark, with opportunities to further reduce storage and deployment costs.

This shows how Rocket Mobius deployments can be easily configured to match specific enterprise operational goals for runtime cost, fault tolerance, and operational security without impeding performance and scalability.



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