HYPERLEDGER CALIPER

Basic information

DLT: fabric

Name: insert-historical-data-hash-benchmark

Description: Benchmarking the Hyperledger Fabric network with the InsertHistoricalDataHash function

Benchmark Rounds: 3

Details

Benchmark results

Summary

insert-historical-data-hash-100

insert-historical-data-hash-1000

insert-historical-data-hash-2000

System under test

Details

Caliper report

Summary of performance metrics

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
insert-historical-data-hash-100	100	1	101.2	1.18	0.14	0.76	50.6
insert-historical-data-hash-1000	100	1	101.1	2.03	0.65	1.53	37.5
insert-historical-data-hash-2000	101	0	101.1	3.65	2.49	2.76	21.7

Benchmark round: insert-historical-data-hash-100

Test InsertHistoricalDataHash function with data hash size 100 bytes

```
txDuration: 1
rateControl:
  type: fixed-rate
  opts:
    tps: 100
```

Performance metrics for insert-historical-data-hash-100

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
insert-historical-data-hash-100	100	1	101.2	1.18	0.14	0.76	50.6

Resource utilization for insert-historical-data-hash-100

Resource monitor: prometheus

Metric	Prometheus Query	Name
Avg Memory (MB)	sum(container_memory_rss{name=~".+"}) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		dev-peer0.org2.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
CPU (%)	sum(rate(container_cpu_usage_seconds_total{name=~".+"}[1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		dev-peer0.org2.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		orderer.example.com

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System under test

Details

Metric	Prometheus Query	Name
		peer0.org1.example.com
		peer0.org2.example.com
Disc Write (MB)	sum(rate(container_fs_writes_bytes_total{name=~".+"}[1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
Disc Read (MB)	sum(rate(container_fs_reads_bytes_total{name=~".+"}[1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Benchmark round: insert-historical-data-hash-1000

Test InsertHistoricalDataHash function with data hash size 1000 bytes

```
txDuration: 1
rateControl:
  type: fixed-rate
  opts:
    tps: 100
```

Performance metrics for insert-historical-data-hash-1000

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
insert-historical-data-hash-1000	100	1	101.1	2.03	0.65	1.53	37.5

Resource utilization for insert-historical-data-hash-1000

Resource monitor: prometheus

Metric	Prometheus Query	Name
Avg Memory (MB)	sum(container_memory_rss{name=~".+"}) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		dev-peer0.org2.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
CPU (%)	sum(rate(container_cpu_usage_seconds_total{name=~".+"}[1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-

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Summary

insert-historical-data-hash-100

insert-historical-data-hash-1000

insert-historical-data-hash-2000

System under test

Details

Metric	Prometheus Query	Name
		e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		dev-peer0.org2.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
Disc Write (MB)	sum(rate(container_fs_writes_bytes_total{name=~".+"}[1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
Disc Read (MB)	sum(rate(container_fs_reads_bytes_total{name=~".+"}[1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Benchmark round: insert-historical-data-hash-2000

Test InsertHistoricalDataHash function with data hash size 2000 bytes

```
txDuration: 1
rateControl:
  type: fixed-rate
  opts:
    tps: 100
    startingTps: 1
```

Performance metrics for insert-historical-data-hash-2000

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
insert-historical-data-hash-2000	101	0	101.1	3.65	2.49	2.76	21.7

Resource utilization for insert-historical-data-hash-2000

Resource monitor: prometheus

Metric	Prometheus Query	Name
Avg Memory (MB)	sum(container_memory_rss{name=~".+"}) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		dev-peer0.org2.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

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Benchmark results

Summary

insert-historical-data-hash-100

insert-historical-data-hash-1000

insert-historical-data-hash-2000

System under test

Details

Metric	Query	Name
CPU (%)	sum(rate(container_cpu_usage_seconds_total{name=~".+"} [1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		dev-peer0.org2.example.com-basic_1.0-e961b826e2a1772403fa1461dc69e5cc120473a06e4fe1c3c9cd9eb35cdb2ab3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
Disc Write (MB)	sum(rate(container_fs_writes_bytes_total{name=~".+"} [1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
Disc Read (MB)	sum(rate(container_fs_reads_bytes_total{name=~".+"} [1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Test Environment

benchmark config

```
name: insert-historical-data-hash-benchmark
description: >-
  Benchmarking the Hyperledger Fabric network with the InsertHistoricalDataHash
  function
workers:
  number: 1
rounds:
  - label: insert-historical-data-hash-100
    description: Test InsertHistoricalDataHash function with data hash size 100
bytes
    chaincodeID: basic
    txDuration: 1
    rateControl:
      type: fixed-rate
      opts:
        tps: 100
    workload:
      module: benchmarks/datamanagement/workloads/historical-insert-data-hash.js
      arguments:
        chaincodeID: basic
        byteSize: 100
  - label: insert-historical-data-hash-1000
    description: Test InsertHistoricalDataHash function with data hash size 1000
bytes
    chaincodeID: basic
    txDuration: 1
    rateControl:
      type: fixed-rate
      opts:
        tps: 100
    workload:
      module: benchmarks/datamanagement/workloads/historical-insert-data-hash.js
      arguments:
        chaincodeID: basic
        byteSize: 1000
  - label: insert-historical-data-hash-2000
    description: Test InsertHistoricalDataHash function with data hash size 2000
bytes
    chaincodeID: basic
    txDuration: 1
    rateControl:
      type: fixed-rate
      opts:
```

```
      tps: 100
      startingTps: 1
   workload:
      module: benchmarks/datamanagement/workloads/historical-insert-data-hash.js
      arguments:
         chaincodeID: basic
         byteSize: 2000
```

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[Details](#)

Benchmark results

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[insert-historical-data-hash-100](#)

[insert-historical-data-hash-1000](#)

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System under test

[Details](#)

SUT

```
  not provided
```