



Basic information

DLT: fabric
Name: sensor-query
Description: This testcase is to determine the large numbers of consumer query the sensor from application to check the scalability on hyperledger. Successive rounds create and retrieve assets of larger byteSize.
Benchmark Rounds: 3
[Details](#)

Benchmark results

[Summary](#)
[sensor-query-evaluate-100](#)
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[sensor-query-evaluate-2000](#)

System under test

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Caliper report

Summary of performance metrics

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
sensor-query-evaluate-100	150	0	38.4	3.11	0.93	1.95	31.0
sensor-query-evaluate-1000	150	0	40.8	2.05	0.12	1.38	32.0
sensor-query-evaluate-2000	150	0	44.3	2.22	0.18	1.58	34.3

Benchmark round: sensor-query-evaluate-100

Test an evaluateTransaction() Gateway method against the NodeJS `basic` Smart Contract method named `sensorQuery`. This method performs a getState on an item that matches an asset of size 100 bytes.

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

Performance metrics for sensor-query-evaluate-100

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
sensor-query-evaluate-100	150	0	38.4	3.11	0.93	1.95	31.0

Resource utilization for sensor-query-evaluate-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



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		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: sensor-query-evaluate-1000

Test an evaluateTransaction() Gateway method against the NodeJS `basic` Smart Contract method named `sensorQuery`. This method performs a getState on an item that matches an asset of size 1000 bytes.

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

Performance metrics for sensor-query-evaluate-1000

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
sensor-query-evaluate-1000	150	0	40.8	2.05	0.12	1.38	32.0

Resource utilization for sensor-query-evaluate-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



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		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

Benchmark round: sensor-query-evaluate-2000

Test an evaluateTransaction() Gateway method against the NodeJS `basic` Smart Contract method named `sensorQuery`. This method performs a getState on an item that matches an asset of size 2000 bytes.

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

Performance metrics for sensor-query-evaluate-2000

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
sensor-query-evaluate-2000	150	0	44.3	2.22	0.18	1.58	34.3

Resource utilization for sensor-query-evaluate-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



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		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
		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: sensor-query
description: >-
  This testcase is to determine the large numbers of consumer query the sensor
  from application to check the scalability on hyperledger. Successive rounds
  create and retrieve assets of larger byteSize.
workers:
  number: 50
rounds:
  - label: sensor-query-evaluate-100
    description: >-
      Test an evaluateTransaction() Gateway method against the NodeJS `basic`
      Smart Contract method named `sensorQuery`. This method performs a getState
      on an item that matches an asset of size 100 bytes.
    chaincodeID: basic
    txDuration: 1
    rateControl:
      type: fixed-rate
    opts:
      tps: 100
    workload:
      module: benchmarks/datamanagement/workloads/sensor-query.js
      arguments:
        chaincodeID: basic
        byteSize: 100
        consensus: false
  - label: sensor-query-evaluate-1000
    description: >-
      Test an evaluateTransaction() Gateway method against the NodeJS `basic`
      Smart Contract method named `sensorQuery`. This method performs a getState
      on an item that matches an asset of size 1000 bytes.
    chaincodeID: basic
    txDuration: 1
    rateControl:
      type: fixed-rate
    opts:
      tps: 100
    workload:
      module: benchmarks/datamanagement/workloads/sensor-query.js
```



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```
arguments:
  chaincodeID: basic
  noSetup: true
  byteSize: 1000
  consensus: false
- label: sensor-query-evaluate-2000
  description: >-
    Test an evaluateTransaction() Gateway method against the NodeJS `basic`
    Smart Contract method named `sensorQuery`. This method performs a getState
    on an item that matches an asset of size 2000 bytes.
  chaincodeID: basic
  txDuration: 1
  rateControl:
    type: fixed-rate
    opts:
      tps: 100
  workload:
    module: benchmarks/datamanagement/workloads/sensor-query.js
    arguments:
      chaincodeID: basic
      noSetup: true
      byteSize: 2000
      consensus: false
```

SUT

not provided