



Basic information

DLT: fabric
Name: journey-schedule-benchmark
Description: Benchmarking the Hyperledger Fabric network with the JourneySchedule function
Benchmark Rounds: 5
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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)
journey-schedule-1	4505	0	15.0	2.06	0.05	0.30	14.9
journey-schedule-2	8005	0	20.0	2.08	0.06	0.25	19.9
journey-schedule-3	12505	0	25.0	2.08	0.06	0.25	24.9
journey-schedule-4	18005	0	30.0	2.12	0.06	0.21	29.9
journey-schedule-5	24505	0	35.0	2.14	0.06	0.22	34.9

Benchmark round: journey-schedule-1

Benchmarking the JourneySchedule function with specific parameters.

```
txDuration: 300
rateControl:
  type: fixed-rate
  opts:
    tps: 15
```


Performance metrics for journey-schedule-1

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
journey-schedule-1	4505	0	15.0	2.06	0.05	0.30	14.9

Resource utilization for journey-schedule-1

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_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
CPU (%)	sum(rate(container_cpu_usage_seconds_total{name=~".+"}[1m])) by (name)	orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3



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		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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: journey-schedule-2

Another test case for JourneySchedule function.

```
txDuration: 400
rateControl:
  type: fixed-rate
  opts:
    tps: 20
```

Performance metrics for journey-schedule-2

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
journey-schedule-2	8005	0	20.0	2.08	0.06	0.25	19.9

Resource utilization for journey-schedule-2

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_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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



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		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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: journey-schedule-3

Yet another test case for JourneySchedule function.

```
txDuration: 500
rateControl:
  type: fixed-rate
  opts:
    tps: 25
```


Performance metrics for journey-schedule-3

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
journey-schedule-3	12505	0	25.0	2.08	0.06	0.25	24.9

Resource utilization for journey-schedule-3

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_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Benchmark round: journey-schedule-4

Additional test case for JourneySchedule function.

```
txDuration: 600
rateControl:
  type: fixed-rate
  opts:
    tps: 30
```

Performance metrics for journey-schedule-4

Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
journey-schedule-4	18005	0	30.0	2.12	0.06	0.21	29.9

Resource utilization for journey-schedule-4

Resource monitor: prometheus

Metric	Prometheus Query	Name
Avg Memory (MB)	sum(container_memory_rss{name=~".+"}) by (name)	ca_orderer



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		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Benchmark round: journey-schedule-5

Another additional test case for JourneySchedule function.

```
txDuration: 700
rateControl:
  type: fixed-rate
  opts:
    tps: 35
```

Performance metrics for journey-schedule-5



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Name	Succ	Fail	Send Rate (TPS)	Max Latency (s)	Min Latency (s)	Avg Latency (s)	Throughput (TPS)
journey-schedule-5	24505	0	35.0	2.14	0.06	0.22	34.9

Resource utilization for journey-schedule-5

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_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
		ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
		ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		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
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
		ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		dev-peer0.org2.example.com-basic_1.0-6e937c41a6d40a2ad3db92fa6441461032b4e59b56c47e575e5fec5999a045f3
		orderer.example.com
		peer0.org1.example.com



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		peer0.org2.example.com
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Test Environment

benchmark config

```
name: journey-schedule-benchmark
description: Benchmarking the Hyperledger Fabric network with the JourneySchedule function
workers:
  number: 5
rounds:
  - label: journey-schedule-1
    description: Benchmarking the JourneySchedule function with specific parameters.
    chaincodeID: basic
    txDuration: 300
    rateControl:
      type: fixed-rate
      opts:
        tps: 15
    workload:
      module: benchmarks/api/fabric/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 8000
  - label: journey-schedule-2
    description: Another test case for JourneySchedule function.
    chaincodeID: basic
    txDuration: 400
    rateControl:
      type: fixed-rate
      opts:
        tps: 20
    workload:
      module: benchmarks/api/fabric/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 1000
  - label: journey-schedule-3
    description: Yet another test case for JourneySchedule function.
    chaincodeID: basic
    txDuration: 500
    rateControl:
      type: fixed-rate
      opts:
        tps: 25
    workload:
      module: benchmarks/api/fabric/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 5000
  - label: journey-schedule-4
    description: Additional test case for JourneySchedule function.
    chaincodeID: basic
    txDuration: 600
    rateControl:
      type: fixed-rate
      opts:
        tps: 30
    workload:
      module: benchmarks/api/fabric/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 3000
  - label: journey-schedule-5
    description: Another additional test case for JourneySchedule function.
    chaincodeID: basic
    txDuration: 700
    rateControl:
      type: fixed-rate
      opts:
        tps: 35
    workload:
      module: benchmarks/api/fabric/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 7000
```

SUT

not provided