



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	500	0	15.6	1.85	0.14	0.42	15.5
journey-schedule-2	650	0	20.3	1.32	0.13	0.40	20.2
journey-schedule-3	800	0	24.9	1.09	0.14	0.40	24.8
journey-schedule-4	950	0	29.3	1.45	0.14	0.41	29.1
journey-schedule-5	1100	0	34.4	1.23	0.13	0.43	34.1

Benchmark round: journey-schedule-1

Benchmarking the JourneySchedule function with specific parameters.

```
txDuration: 30
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	500	0	15.6	1.85	0.14	0.42	15.5

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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
CPU (%)	sum(rate(container_cpu_usage_seconds_total{name=~".+"}[1m])) by (name)	peer0.org2.example.com
		ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-



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		637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Benchmark round: journey-schedule-2

Another test case for JourneySchedule function.

```
txDuration: 30
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	650	0	20.3	1.32	0.13	0.40	20.2

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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com



HYPERLEDGER

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CPU (%)	sum(rate(container_cpu_usage_seconds_total{name=~".+"}[1m])) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

## Benchmark round: journey-schedule-3

Yet another test case for JourneySchedule function.

```
txDuration: 30
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	800	0	24.9	1.09	0.14	0.40	24.8

### 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-



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		637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Benchmark round: journey-schedule-4

Additional test case for JourneySchedule function.

```
txDuration: 30
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	950	0	29.3	1.45	0.14	0.41	29.1

Resource utilization for journey-schedule-4

Resource monitor: prometheus

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Metric	Prometheus Query	Name
Avg Memory (MB)	sum(container_memory_rss{name=~".+"}) by (name)	ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org1.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
CPU (%)	sum(rate(container_cpu_usage_seconds_total{name=~".+"}[1m])) by (name)	orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
		ca_orderer
		couchdb0
Disc Write (MB)	sum(rate(container_fs_writes_bytes_total{name=~".+"}[1m])) by (name)	couchdb1
		dev-peer0.org1.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
Disc Read (MB)	sum(rate(container_fs_reads_bytes_total{name=~".+"}[1m])) by (name)	peer0.org2.example.com
		ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com
		ca_orderer
		couchdb0
		couchdb1
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Benchmark round: journey-schedule-5

Another additional test case for JourneySchedule function.

```
txDuration: 30
rateControl:
  type: fixed-rate
  opts:
    tps: 35
```

Performance metrics for journey-schedule-5

Name	Succ	Fail	Send Rate	Max	Min	Avg	Throughput
------	------	------	-----------	-----	-----	-----	------------



			(TPS)	Latency (s)	Latency (s)	Latency (s)	(TPS)
journey-schedule-5	1100	0	34.4	1.23	0.13	0.43	34.1

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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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		dev-peer0.org2.example.com-basic_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		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_1.0-637b908e08b257332d955d5b7eadeac170c68a9499b6070bb44fcd2688726576
		orderer.example.com
		peer0.org1.example.com
		peer0.org2.example.com

Test Environment

benchmark config



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```
name: journey-schedule-benchmark
description: Benchmarking the Hyperledger Fabric network with the JourneySchedule function
workers:
  number: 50
rounds:
  - label: journey-schedule-1
    description: Benchmarking the JourneySchedule function with specific parameters.
    chaincodeID: basic
    txDuration: 30
    rateControl:
      type: fixed-rate
      opts:
        tps: 15
    workload:
      module: benchmarks/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 100
  - label: journey-schedule-2
    description: Another test case for JourneySchedule function.
    chaincodeID: basic
    txDuration: 30
    rateControl:
      type: fixed-rate
      opts:
        tps: 20
    workload:
      module: benchmarks/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: 30
    rateControl:
      type: fixed-rate
      opts:
        tps: 25
    workload:
      module: benchmarks/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 5000
  - label: journey-schedule-4
    description: Additional test case for JourneySchedule function.
    chaincodeID: basic
    txDuration: 30
    rateControl:
      type: fixed-rate
      opts:
        tps: 30
    workload:
      module: benchmarks/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 10000
  - label: journey-schedule-5
    description: Another additional test case for JourneySchedule function.
    chaincodeID: basic
    txDuration: 30
    rateControl:
      type: fixed-rate
      opts:
        tps: 35
    workload:
      module: benchmarks/datamanagement/workloads/create-journey.js
      arguments:
        chaincodeID: basic
        byteSize: 15000
```

SUT

not provided