

Performance Testing



Performance Testing Workshop



Performance Testing

Goals ?

Overall architecture of system

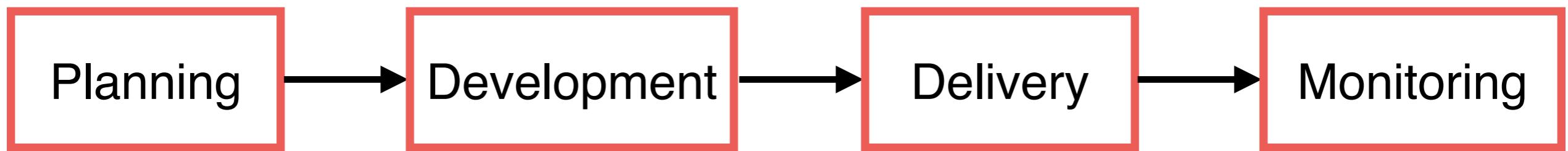
Testing tools

Metrics, reporting and monitoring system

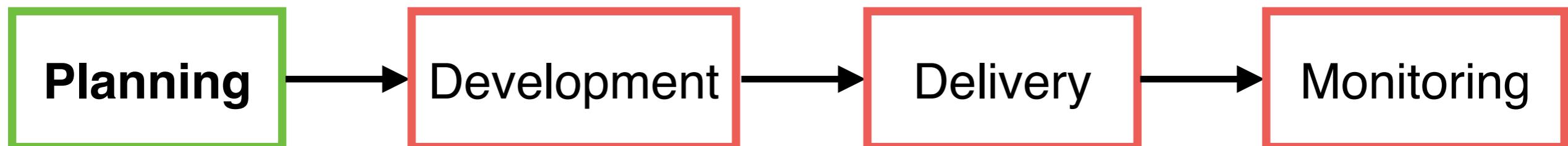
Workshop with Apache JMeter



Performance Testing Processes



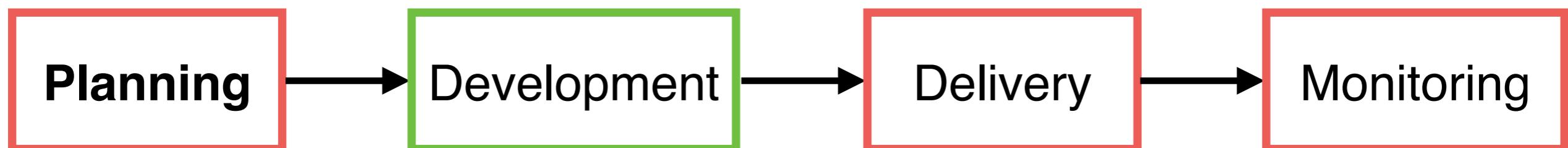
Performance Testing Processes



Requirement management
Performance metrics development



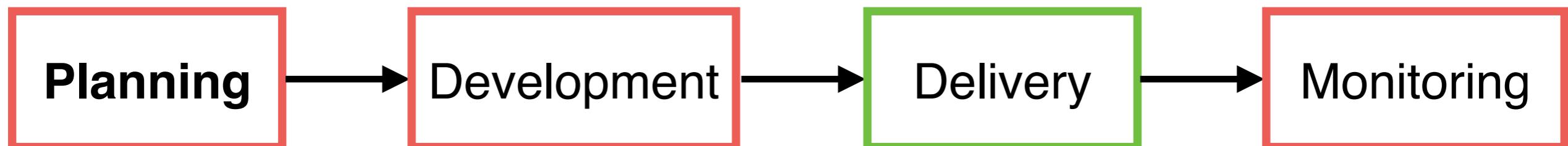
Performance Testing Processes



Architecture analysis
Early detection of performance problems



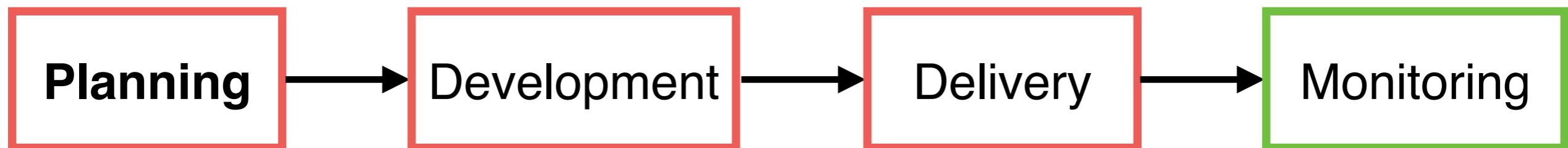
Performance Testing Processes



Acceptance testing
Performance stabilization



Performance Testing Processes



Performance monitoring
Detection of bottlenecks
Recommendations on improvement



Load planning Scalability analysis



Structure of Testing

Goals of Testing

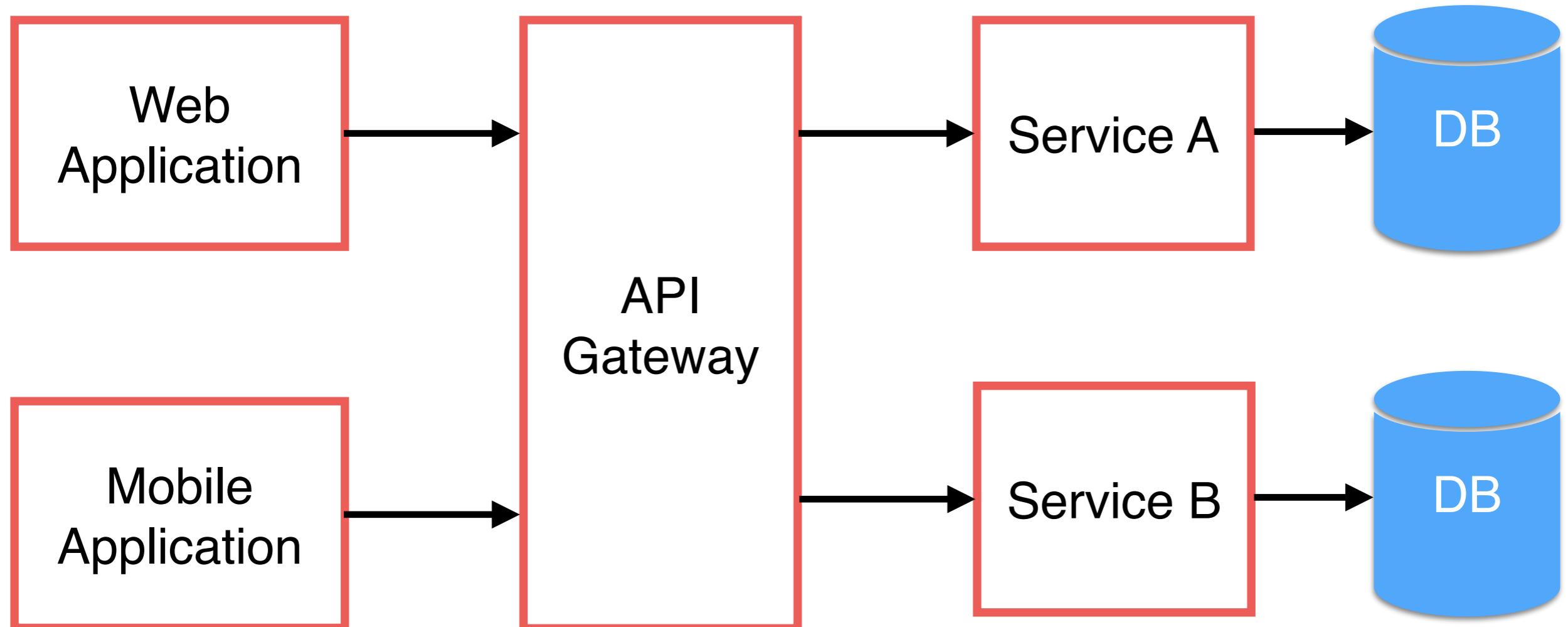
System Under Test
(SUT)

Testing Tools

Monitoring system



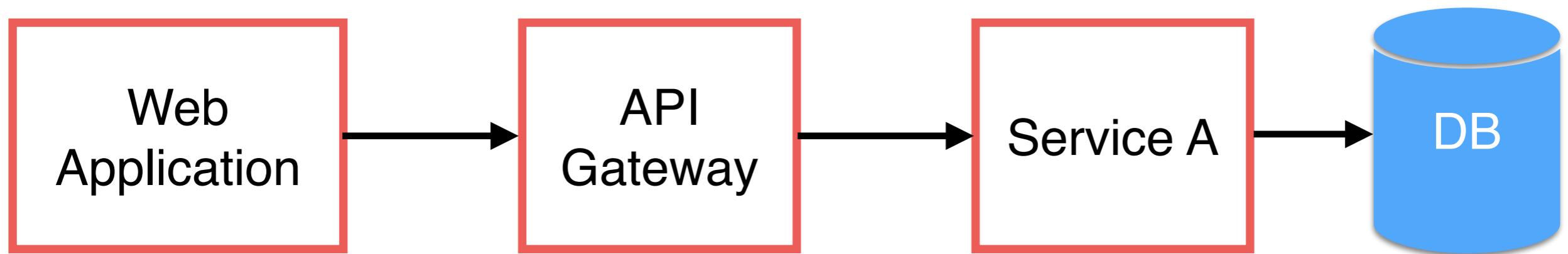
Architecture of System ?



What and How to Test ?

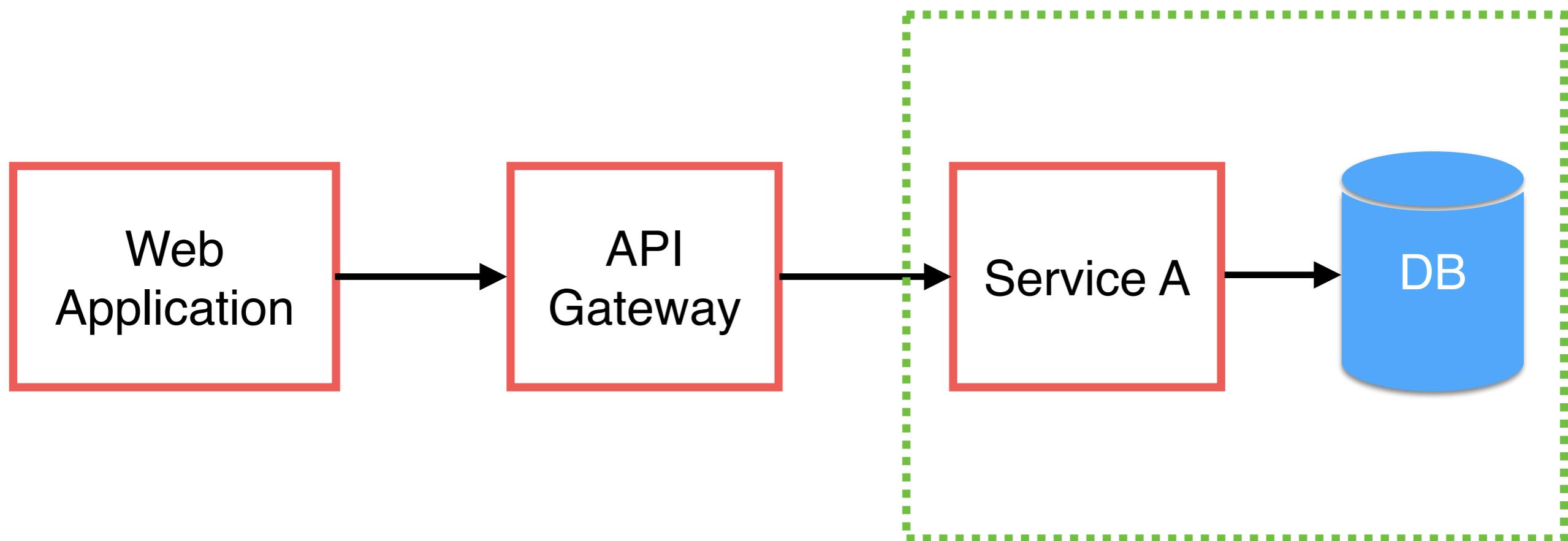


Architecture of System ?



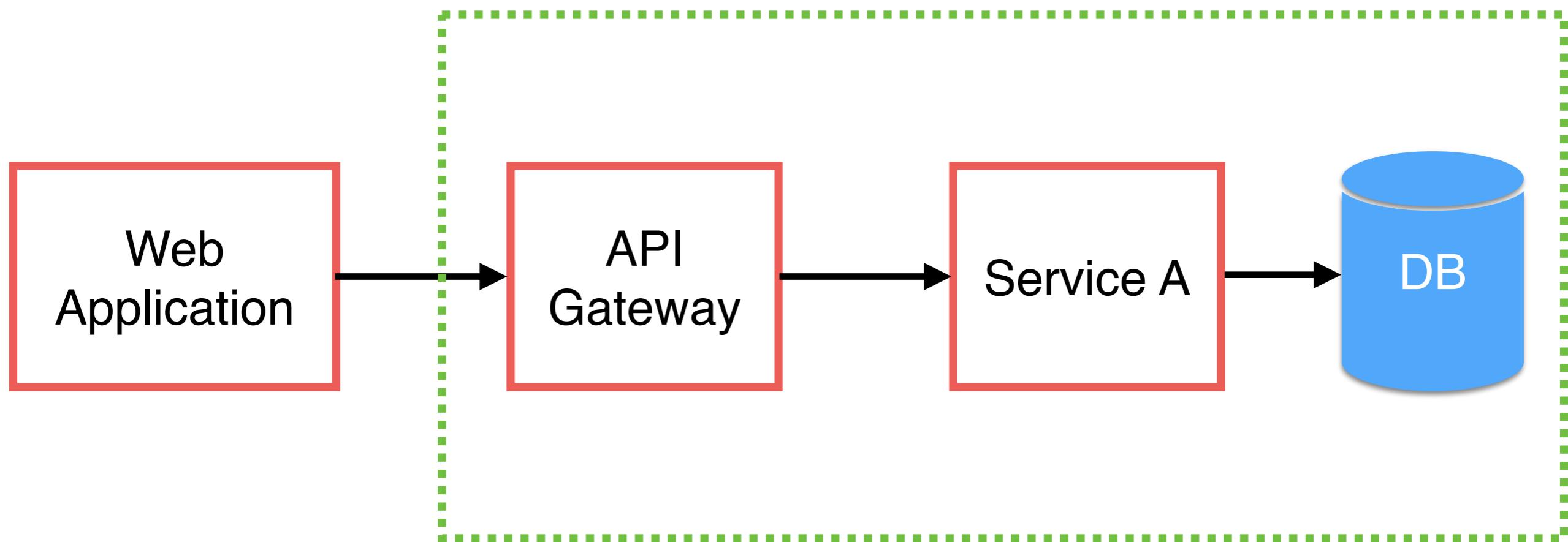
Architecture of System (1)

Inside-out



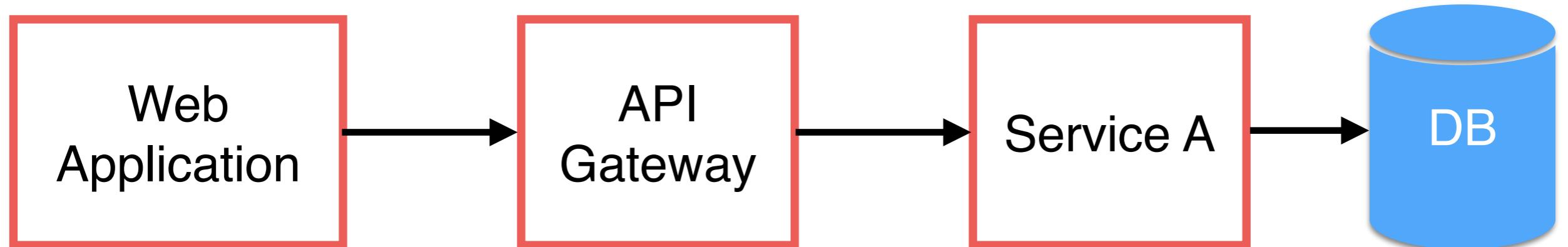
Architecture of System (2)

Inside-out



Architecture of System (3)

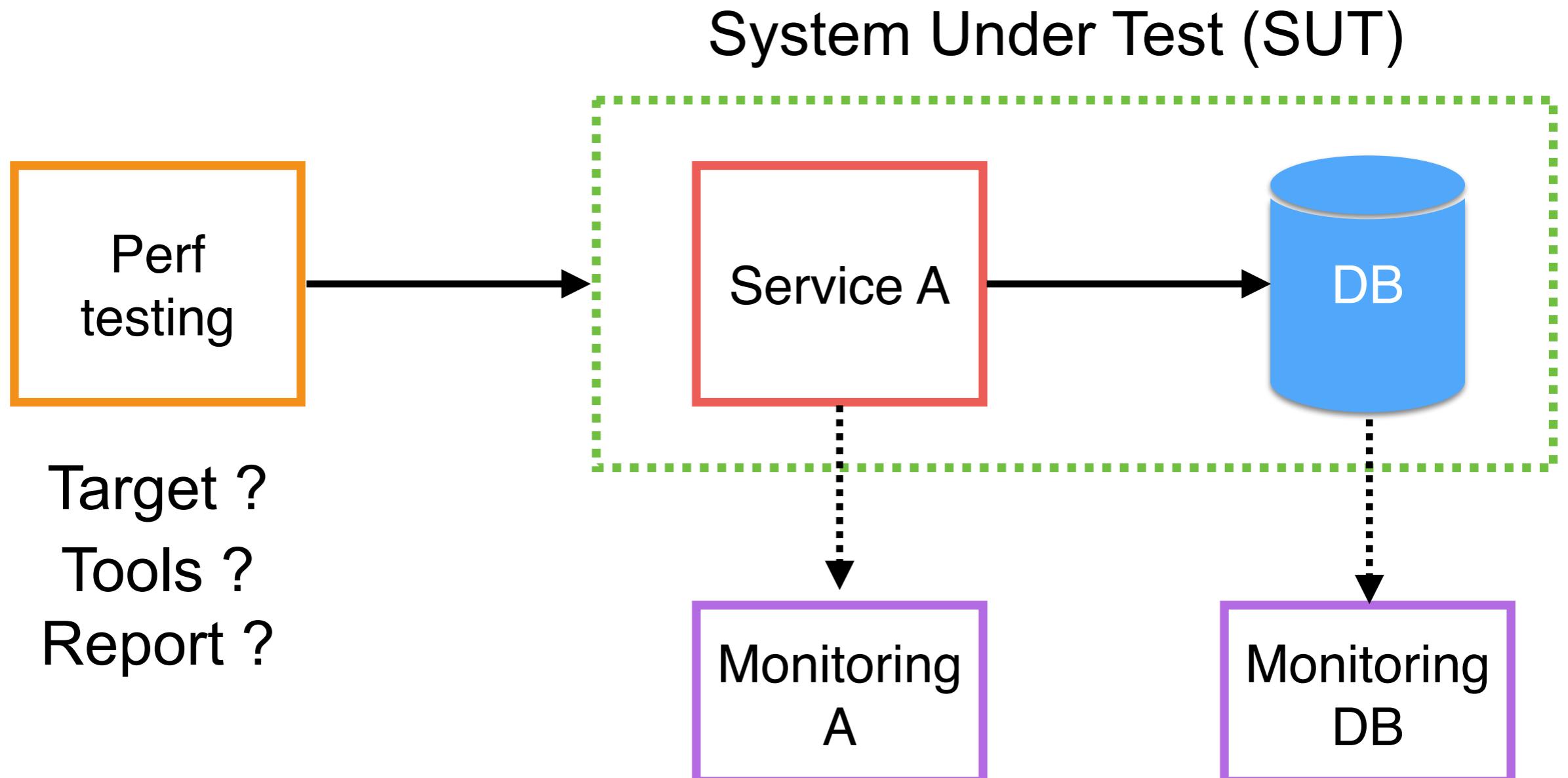
Inside-out



Start with Service A + Database



Service A + Database



KPIs Measurement

Memory

Throughput
(TPS)

Error rate

CPU

Response time

Load time

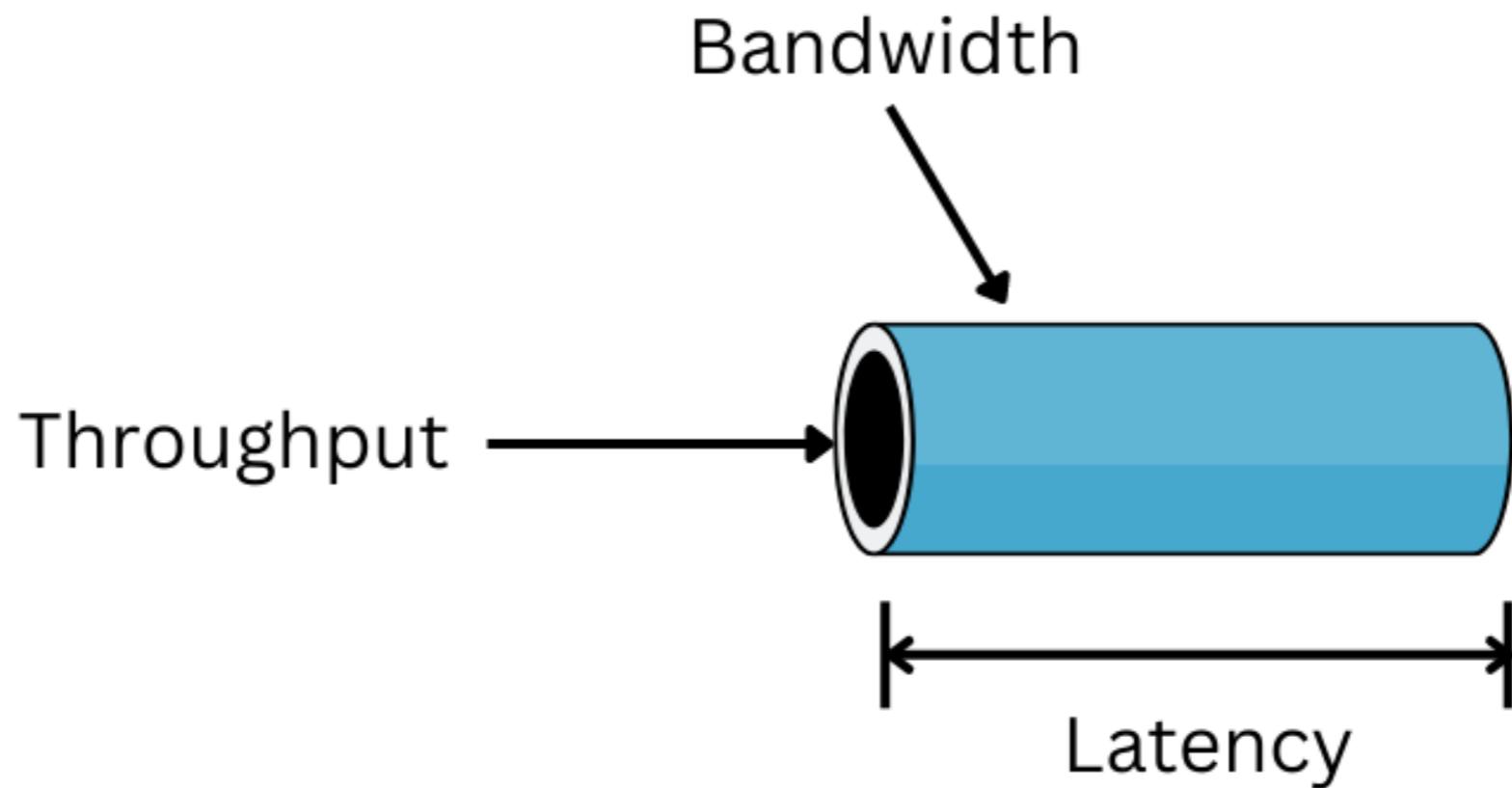
Disk and I/O
usage

Data size

Concurrent
users

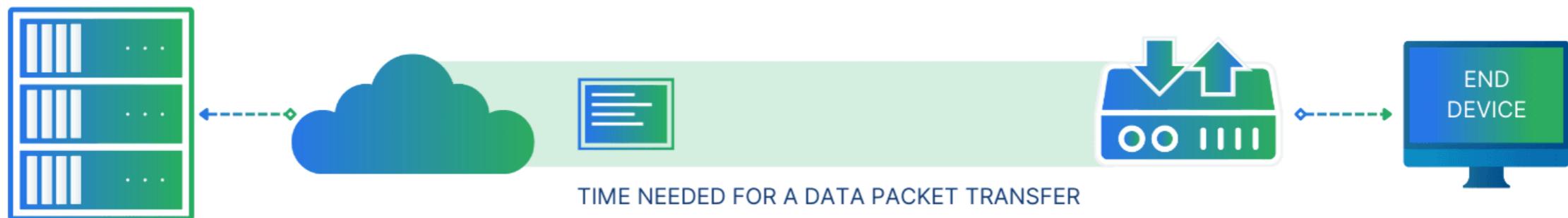


Throughput vs Latency



Throughput vs Latency

LATENCY

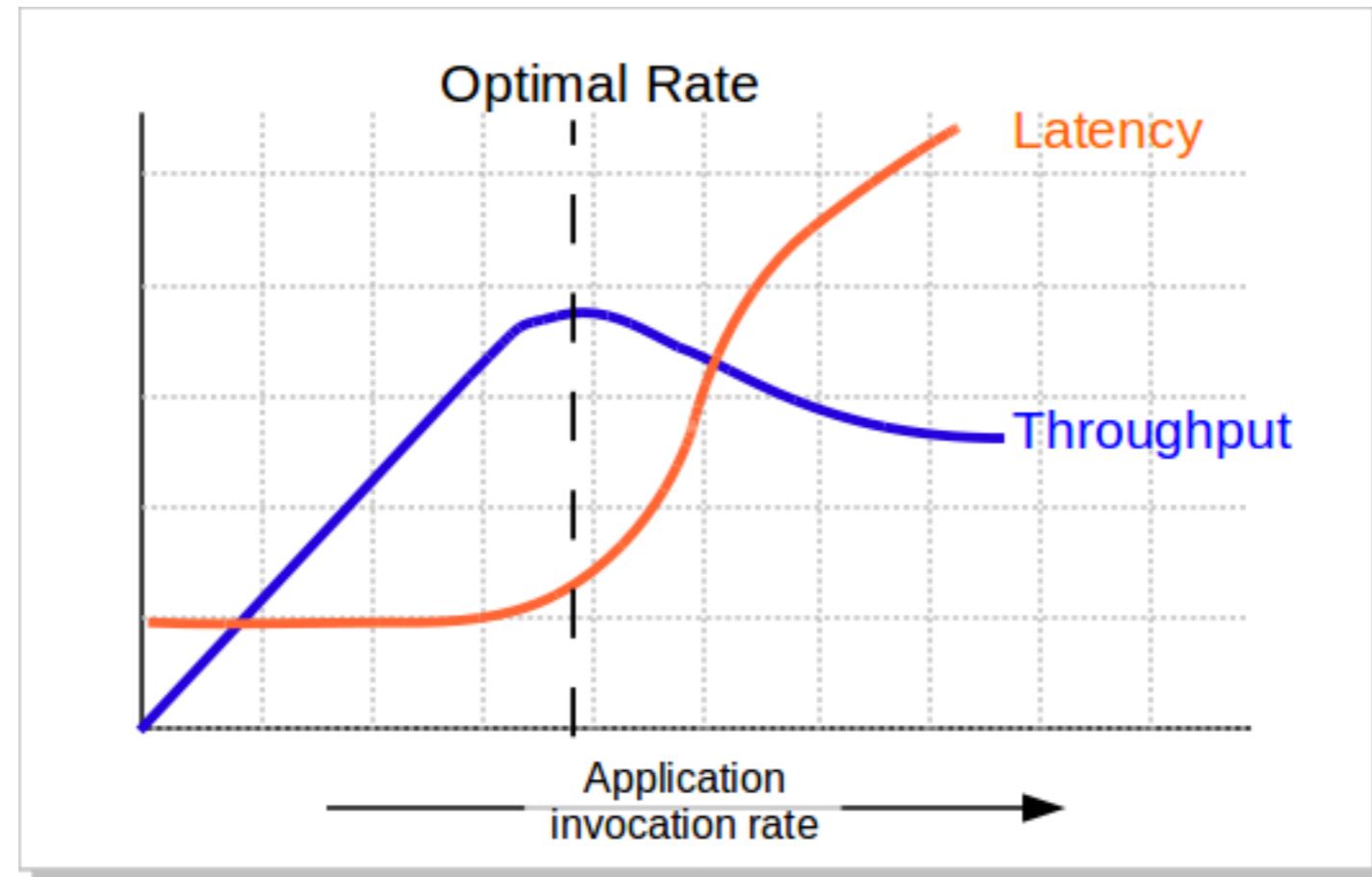


THROUGHPUT



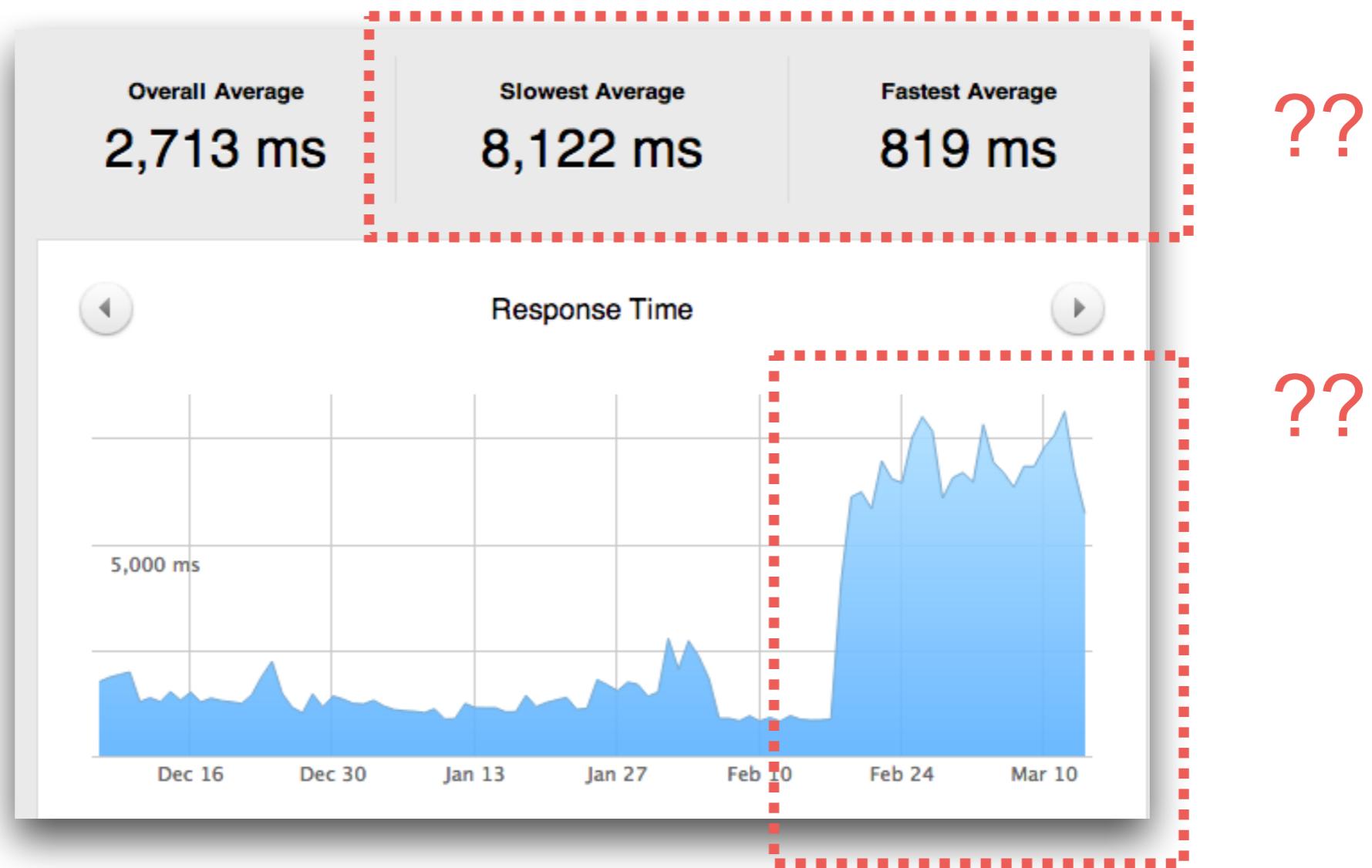
Throughput vs Latency !!

More data, More users !!



Throughput vs Latency !!

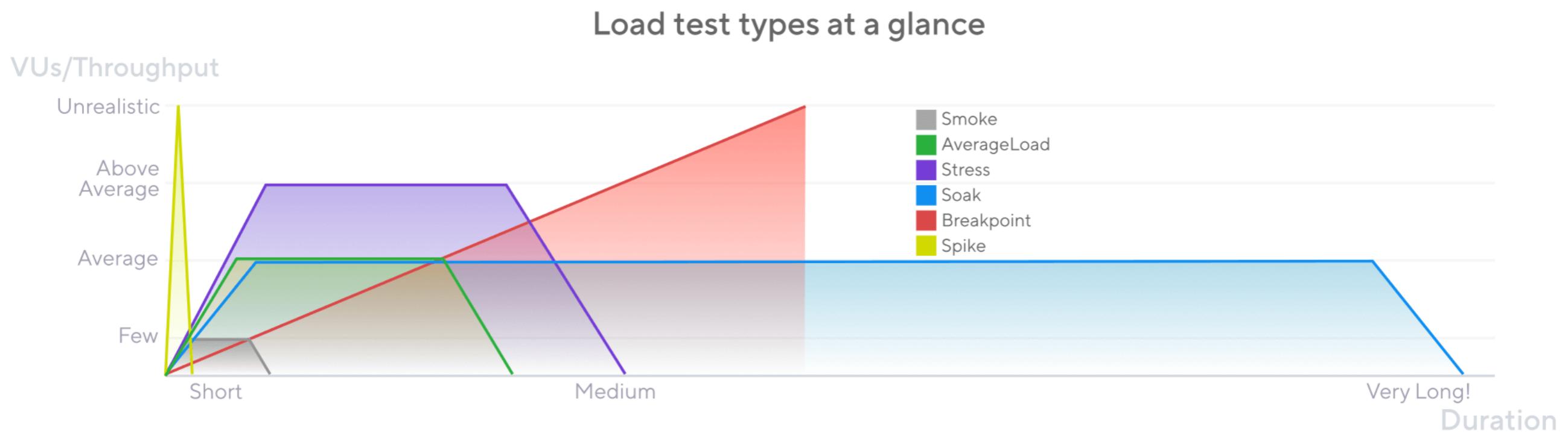
More data, More users !!



Types of load testing ?



Types of load testing



<https://grafana.com/load-testing/types-of-load-testing/>



Performance Testing Tools ?



Performance Testing Tools ?

ApacheBench



Drill



Siege



Wrk

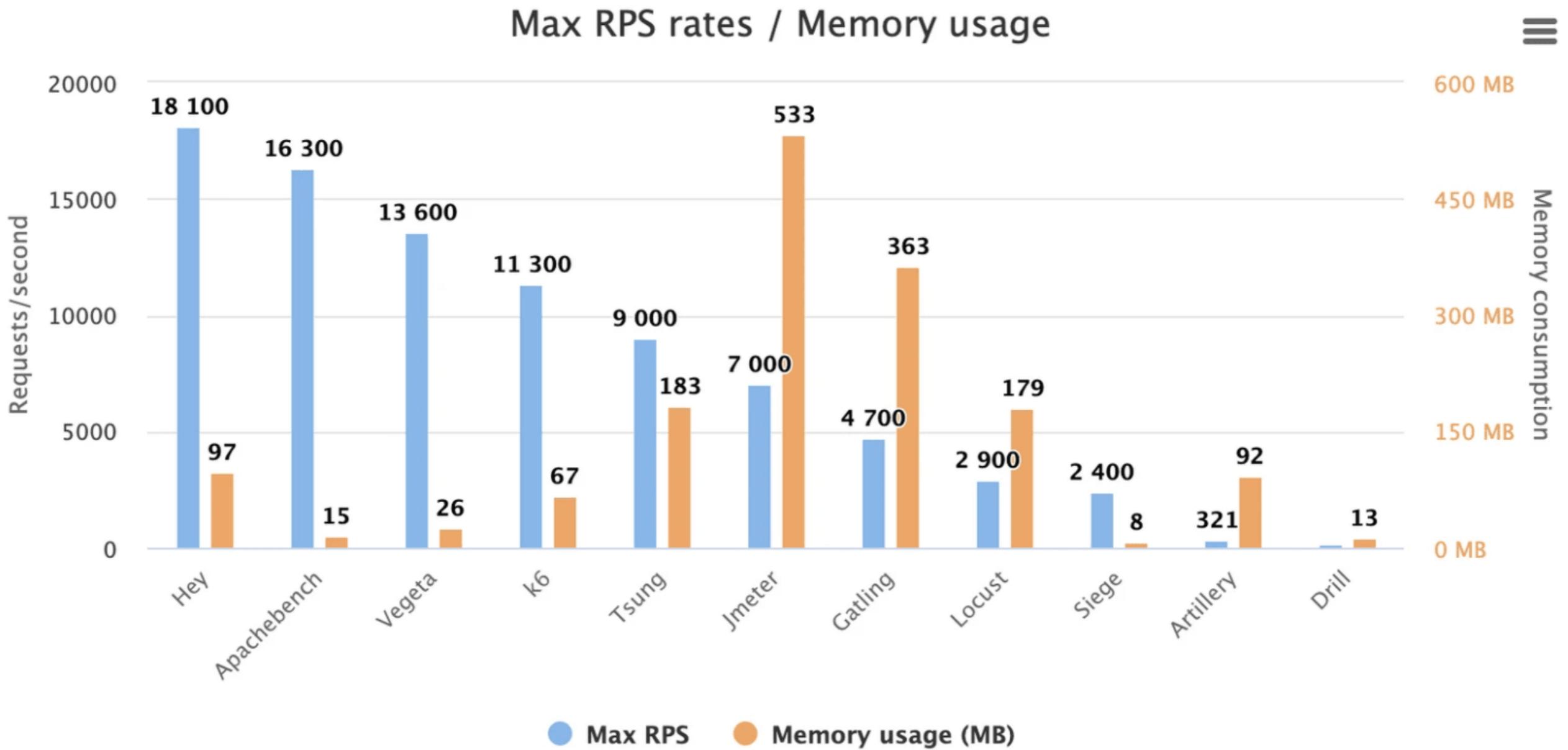
<https://grafana.com/blog/2020/03/03/open-source-load-testing-tool-review/>



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Memory usages !!



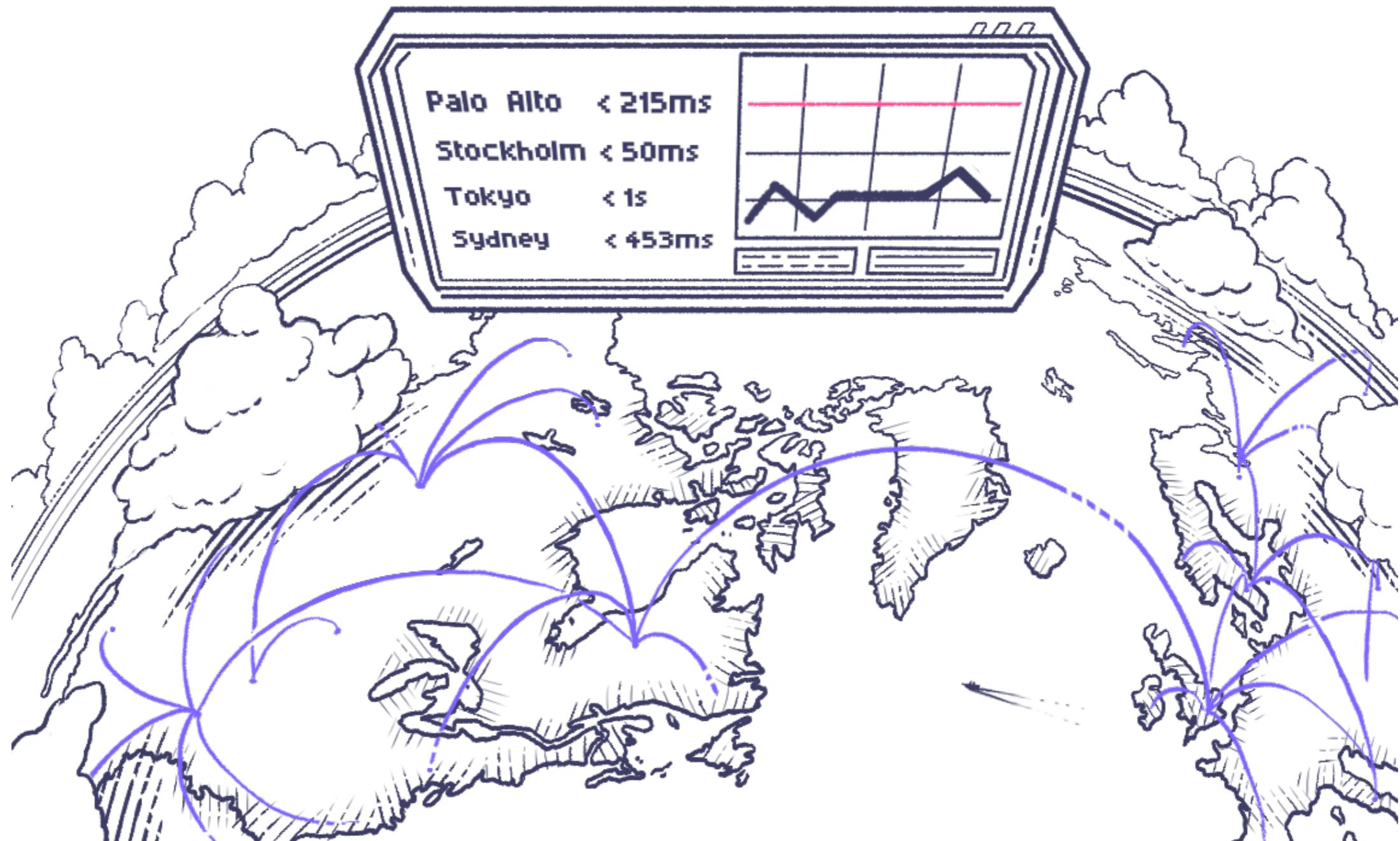
<https://grafana.com/blog/2021/01/27/k6-vs-jmeter-comparison/>



Distributed Testing



Distributed Testing



<https://github.com/grafana/k6-operator>

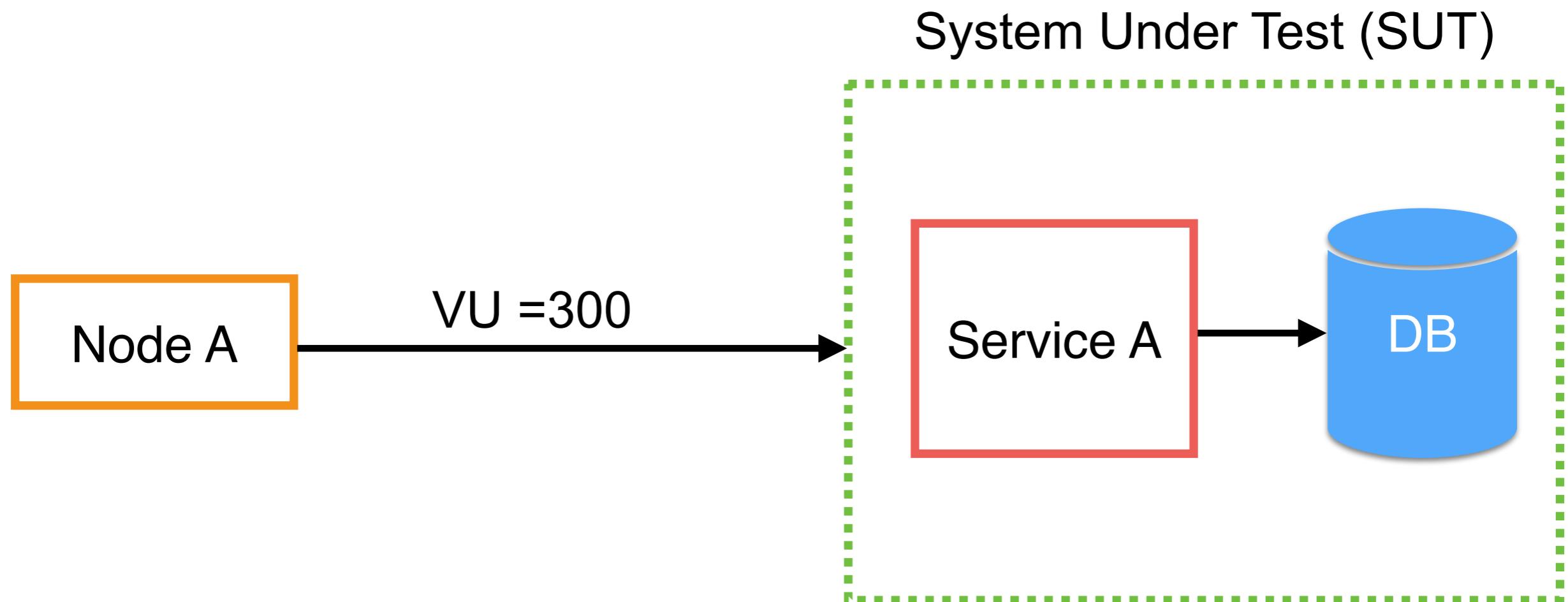


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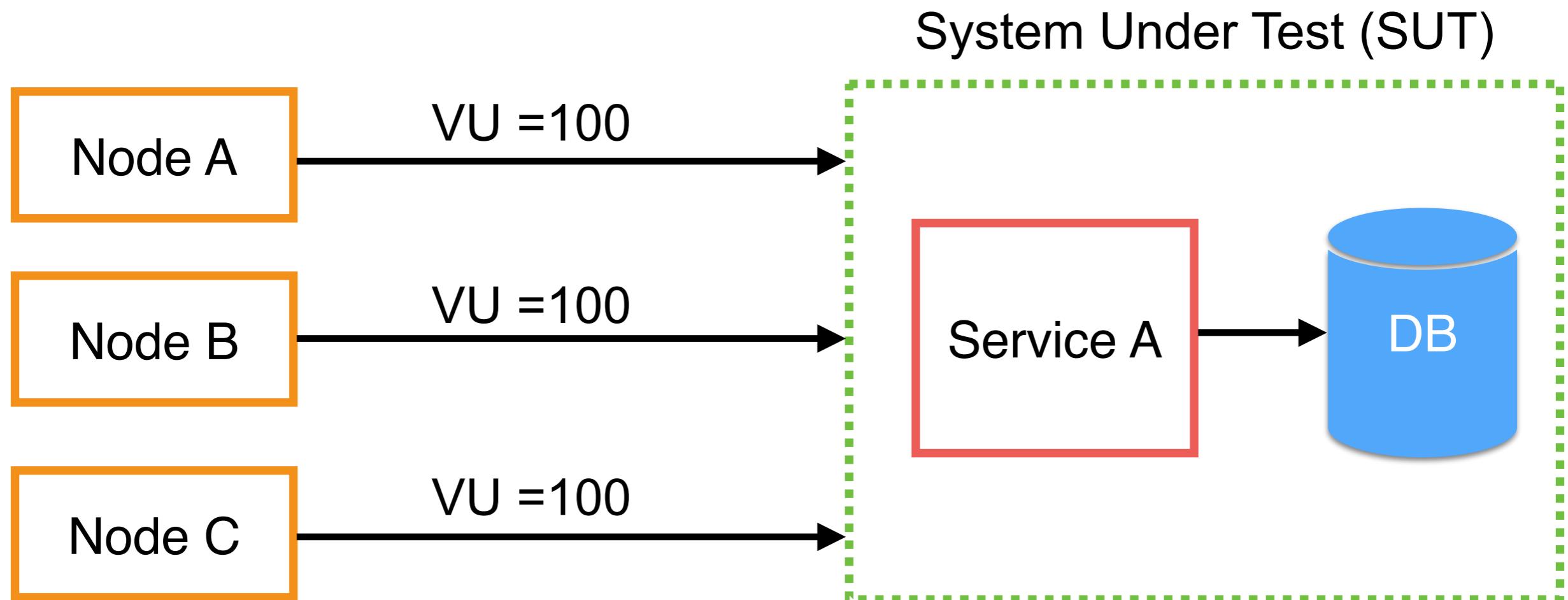
Architecture of Testing

Virtual User = 300

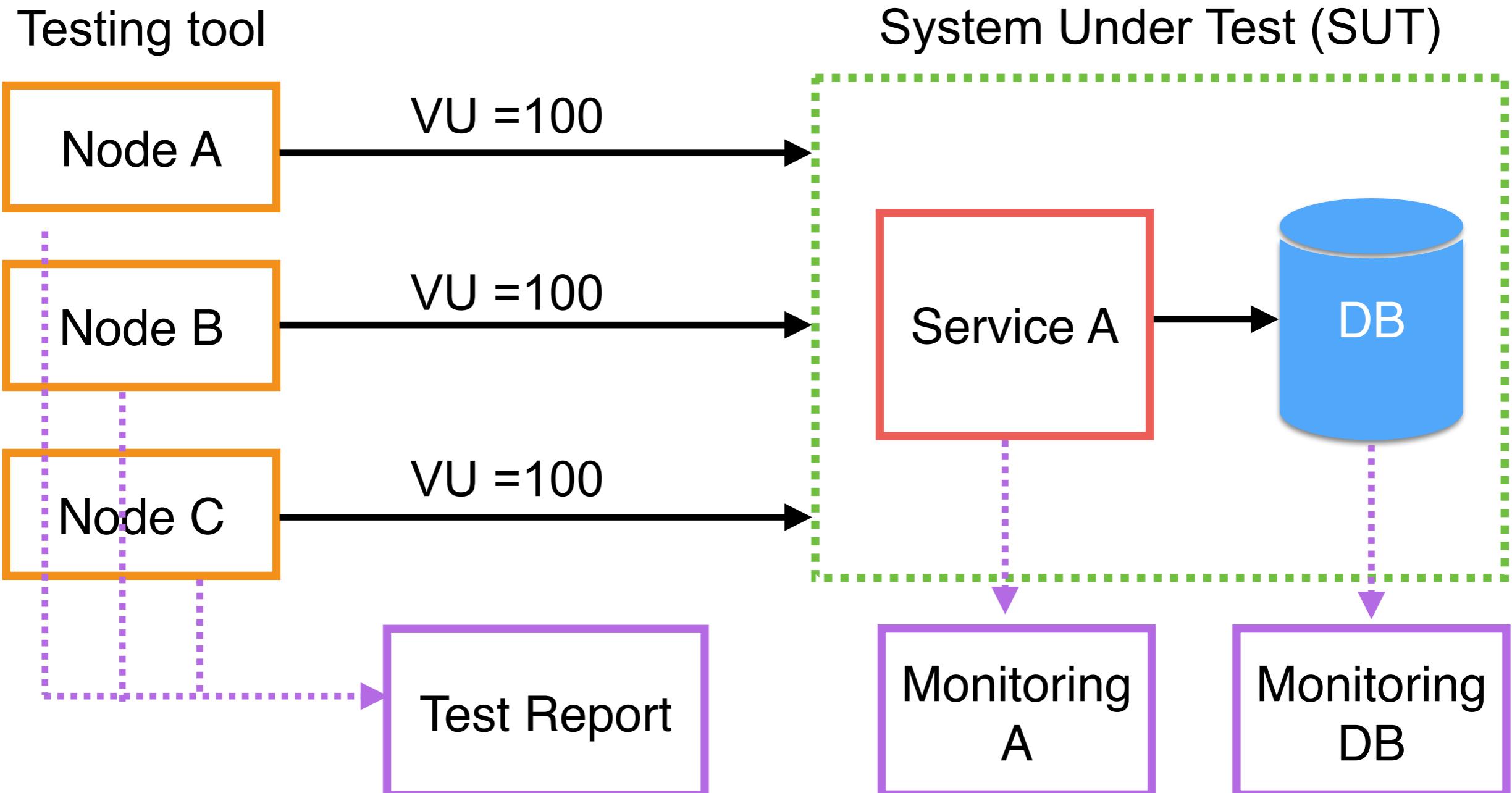


Architecture of Testing

Virtual User = 300



Architecture of Testing



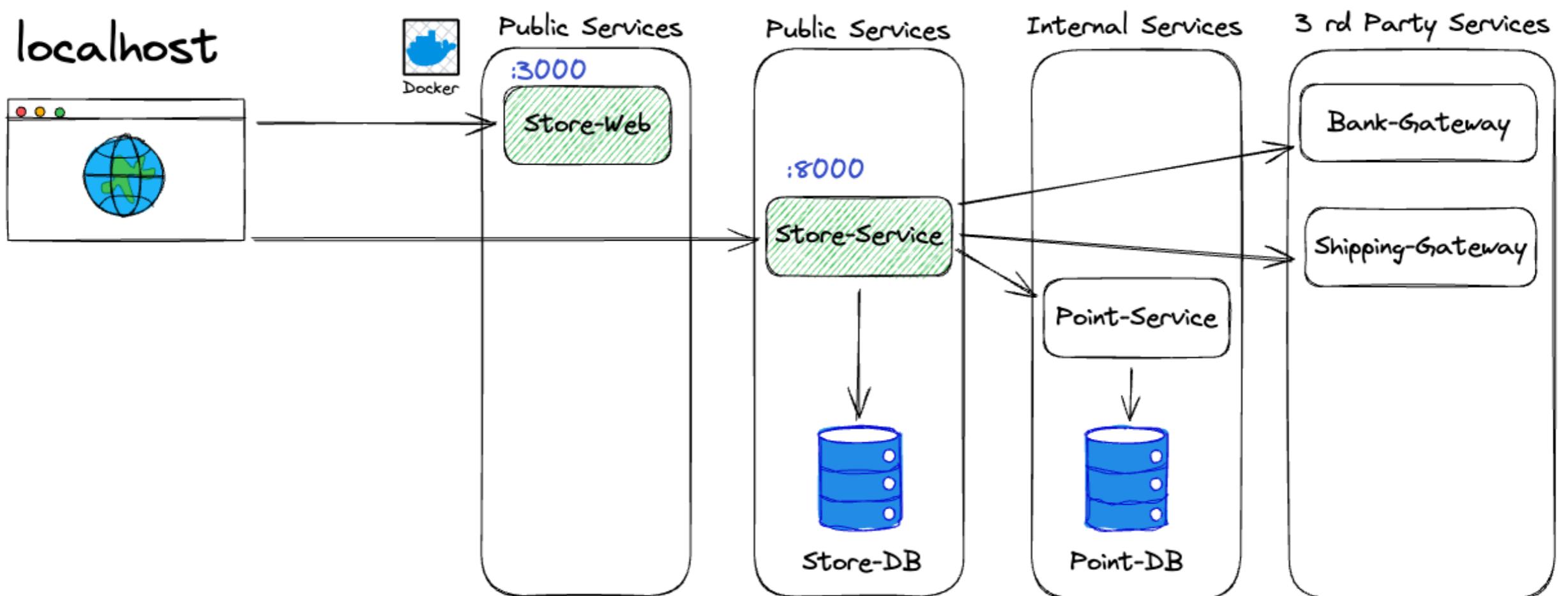
Workshop



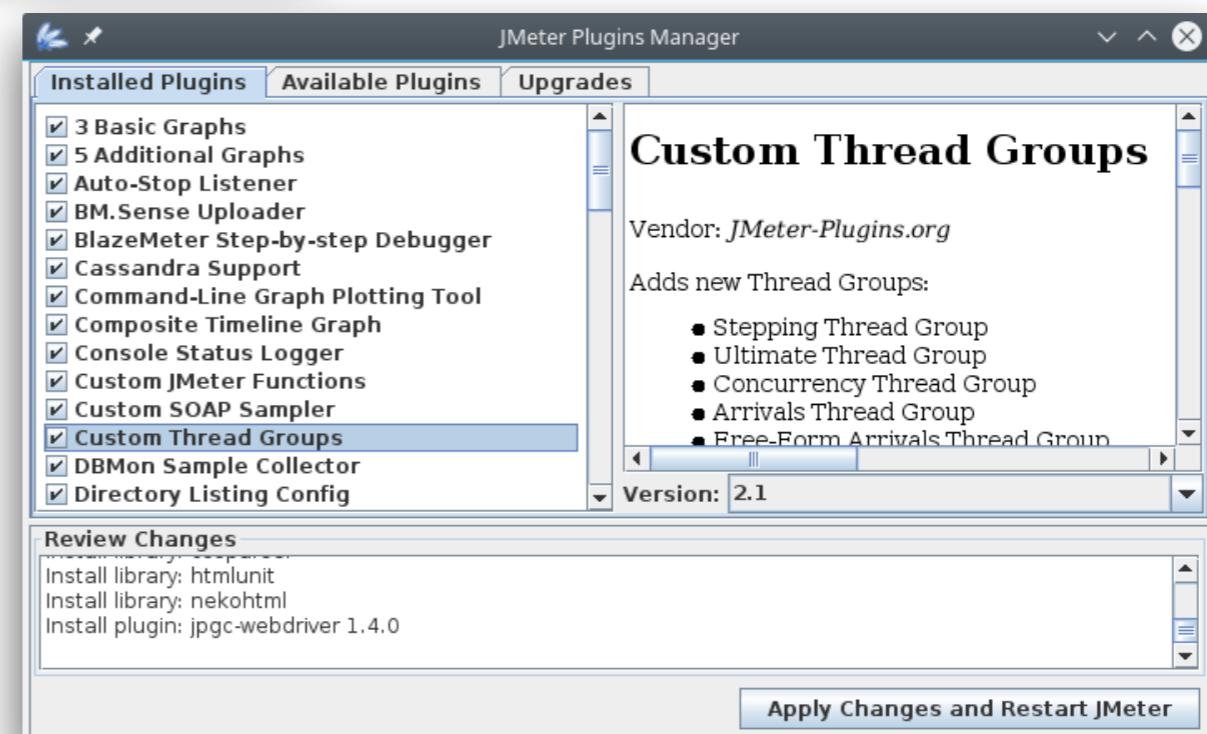
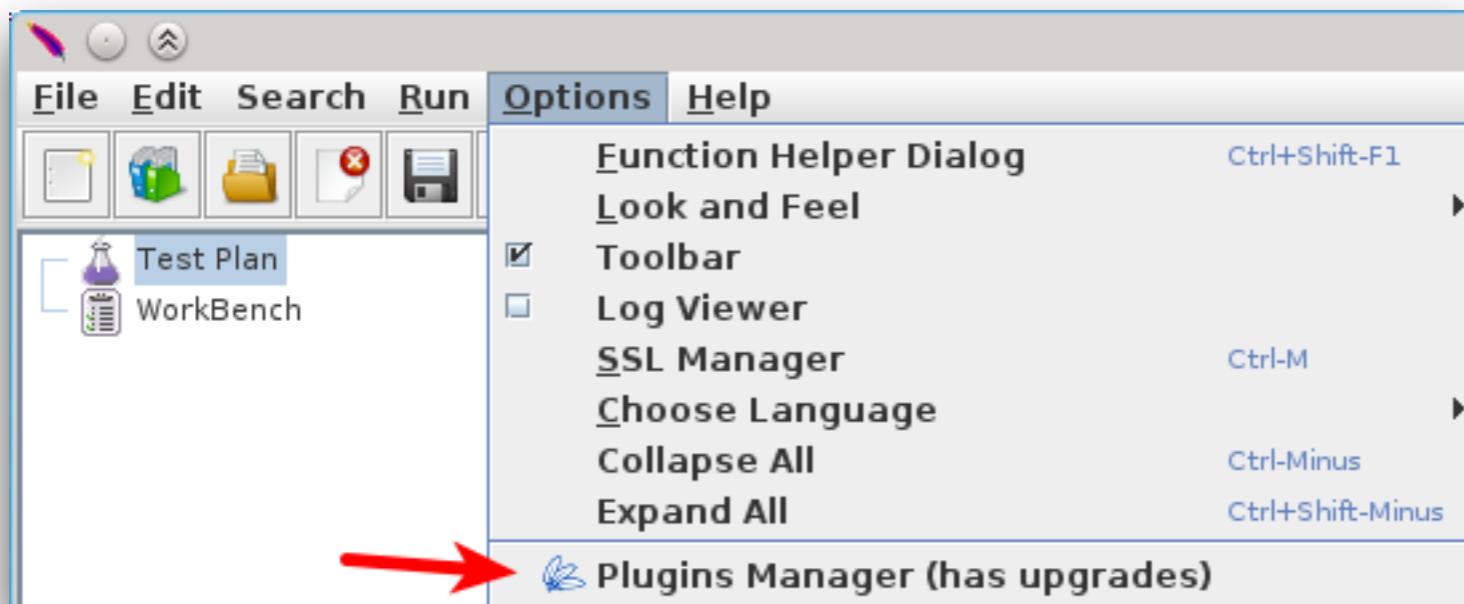
<https://jmeter.apache.org/>



Architecture of System



JMeter Plugin Manager

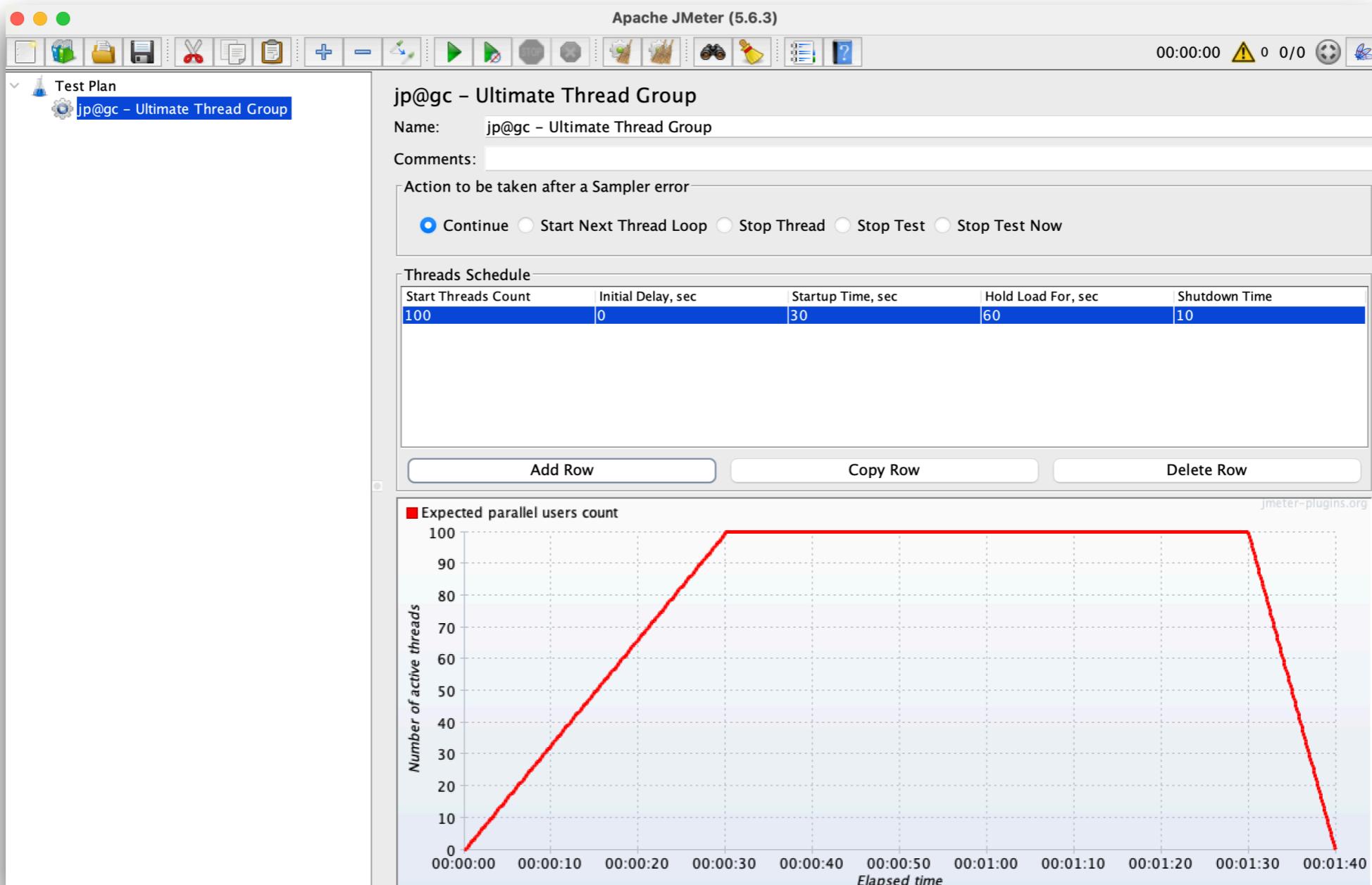


<https://jmeter-plugins.org/wiki/PluginsManager/>



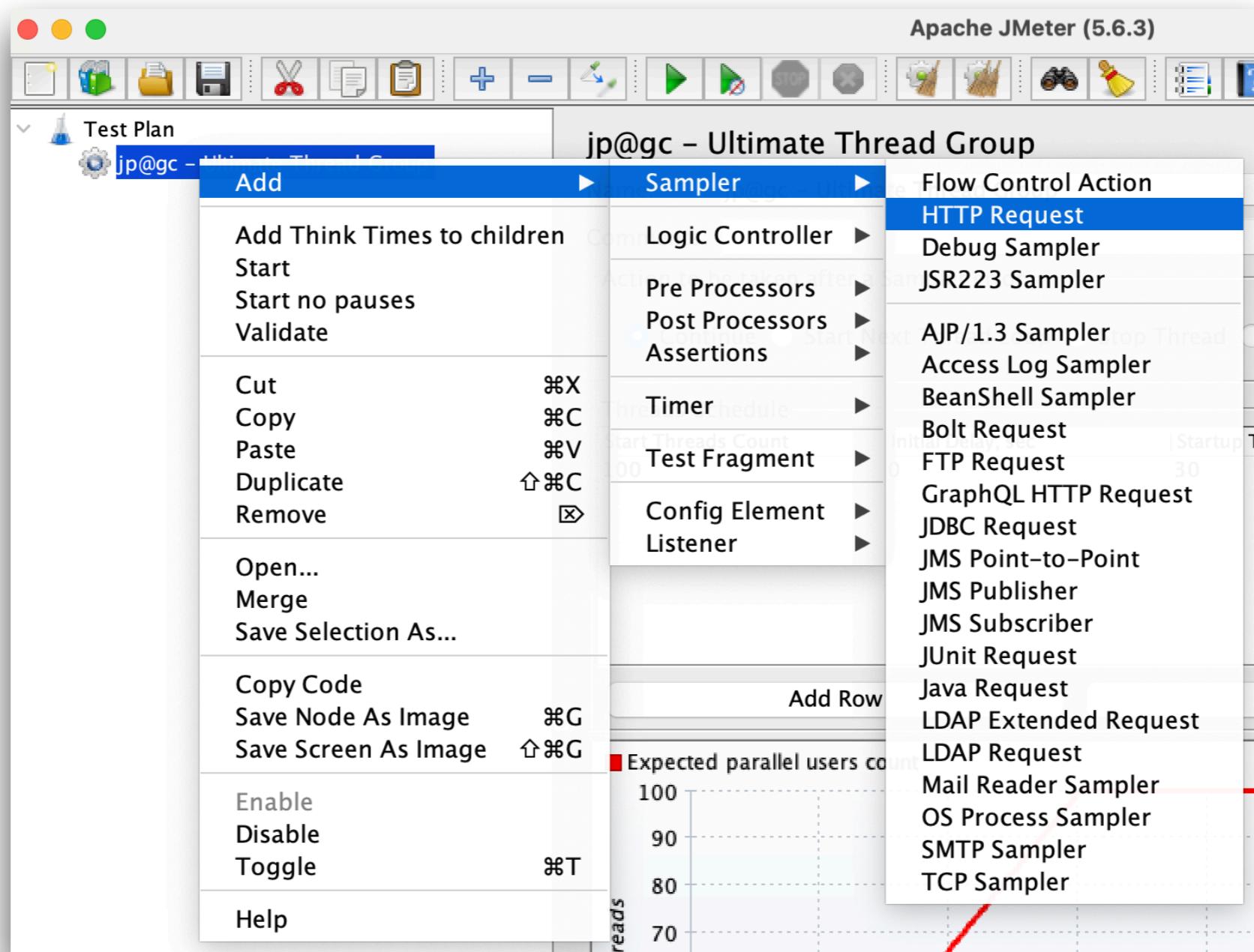
1. Config Virtual Users

Test plan -> Thread Group



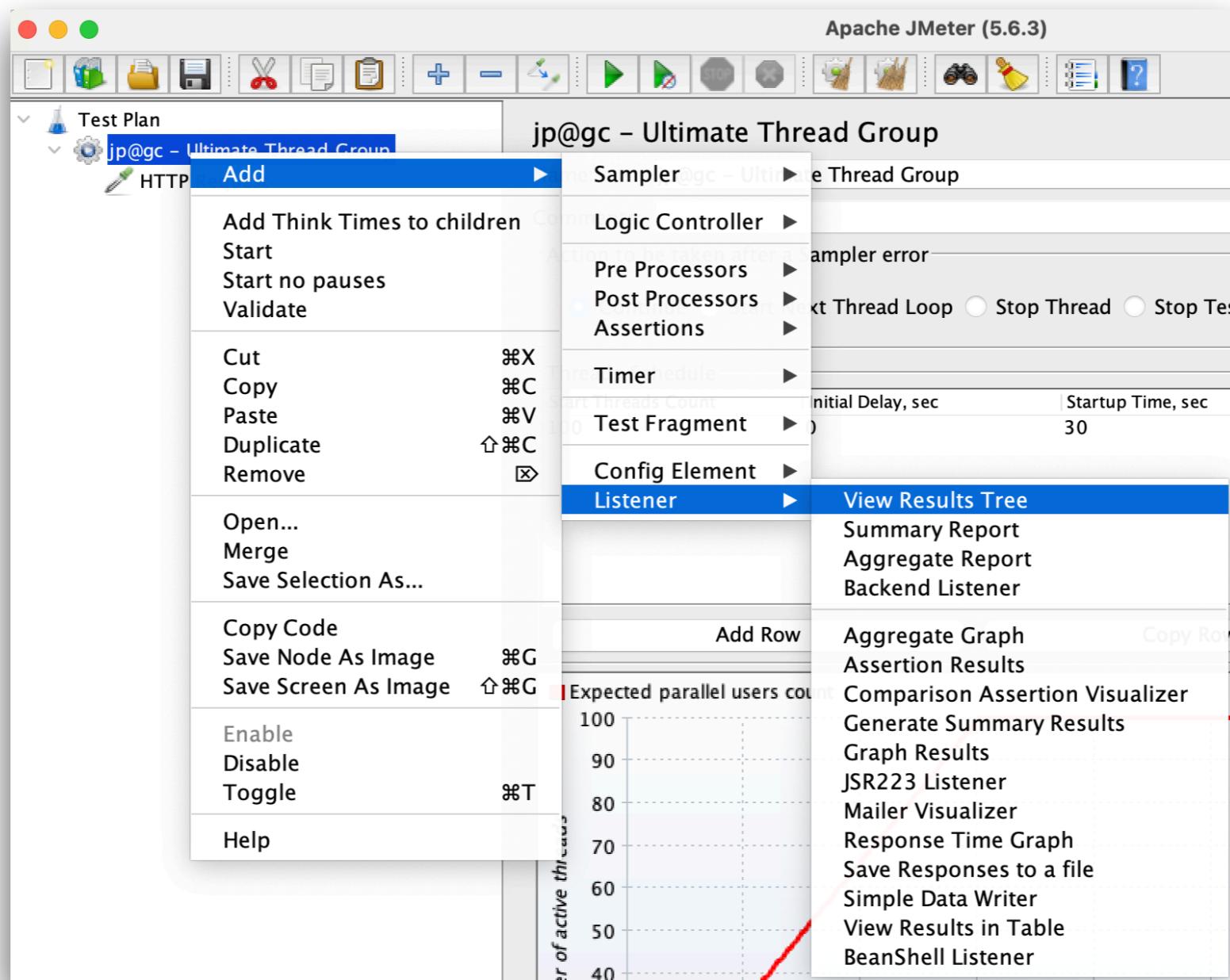
2. Add request for target system

Thread Group -> Add Sampler



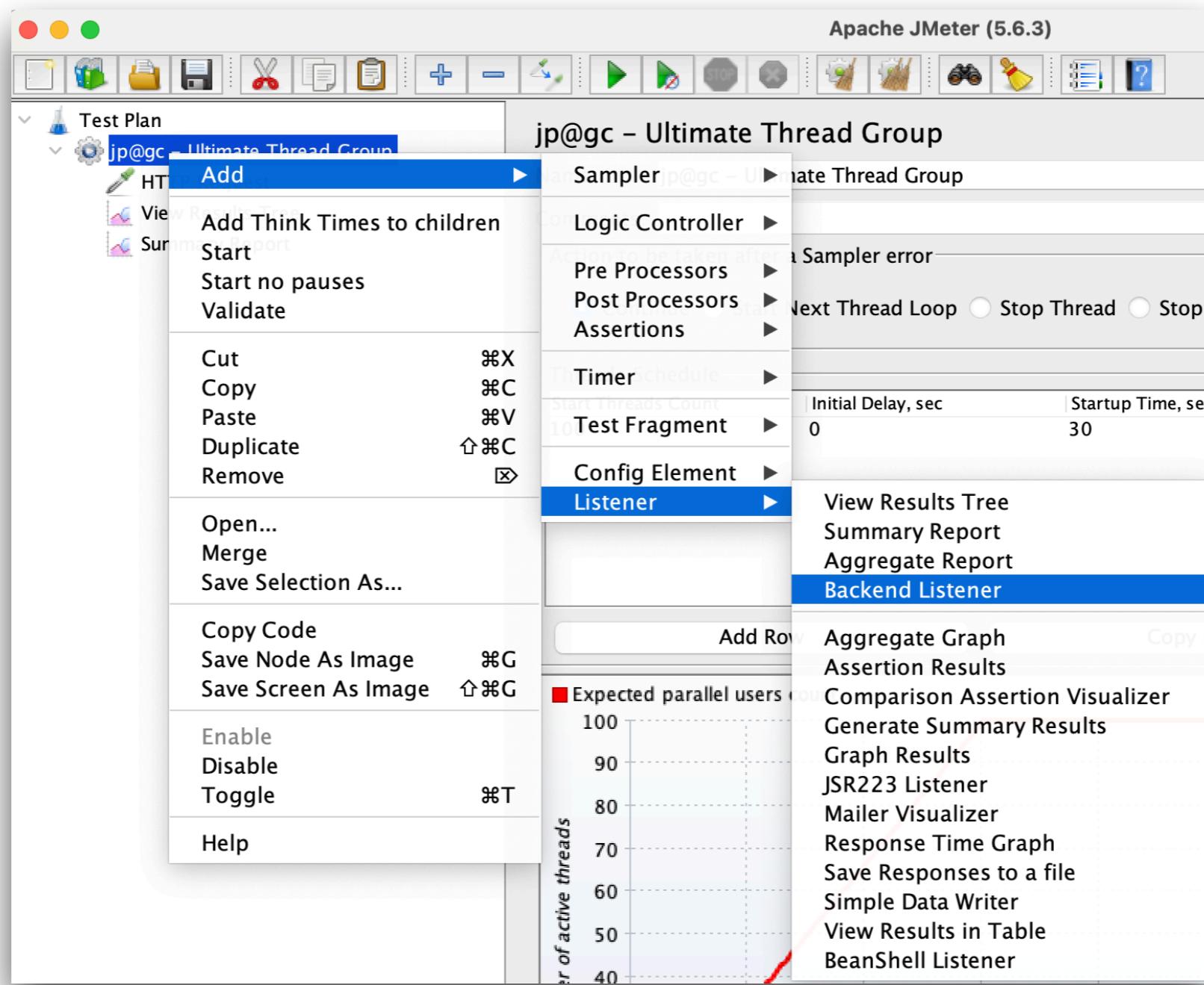
3. Add test report !!

Thread Group -> Add Listener



4. Send Report to InfluxDB

Thread Group -> Add Backend Listener



5. Config Backend Listener

Choose backend = InfluxDB2

The screenshot shows the Apache JMeter 5.6.3 interface. On the left, the Test Plan tree shows a 'jp@gc - Ultimate Thread Group' containing an 'HTTP Request' and a selected 'Backend Listener'. The main panel displays the 'Backend Listener' configuration. The 'Name:' field is set to 'Backend Listener'. The 'Backend Listener implementation' dropdown is open, showing four options: 'io.github.mderevyankoqa.jmeter-influxdb2-listener-plugin.InfluxDatabaseBackendListenerClient' (selected), 'org.apache.jmeter.visualizers.backend.graphite.GraphiteBackendListenerClient', 'org.apache.jmeter.visualizers.backend.influxdb.InfluxDBRawBackendListenerClient', and 'org.apache.jmeter.visualizers.backend.influxdb.InfluxdbBackendListenerClient'. The 'Async Queue size' is set to 5000. Below these settings is a table of parameters:

| Name: | Value |
|----------------------------|------------------------|
| testName | Test |
| nodeName | Test-Node |
| runId | R001 |
| influxDBURL | http://localhost:8086/ |
| influxDBToken | put token here |
| influxDBOrganization | performance_testing |
| influxDBBucket | jmeter |
| influxDBFlushInterval | 4000 |
| influxDBMaxBatchSize | 2000 |
| influxDBThresholdError | 5 |
| samplersList | * |
| useRegexForSamplerList | true |
| recordSubSamples | true |
| saveResponseBodyOnFailures | true |
| responseBodyLength | 2000 |

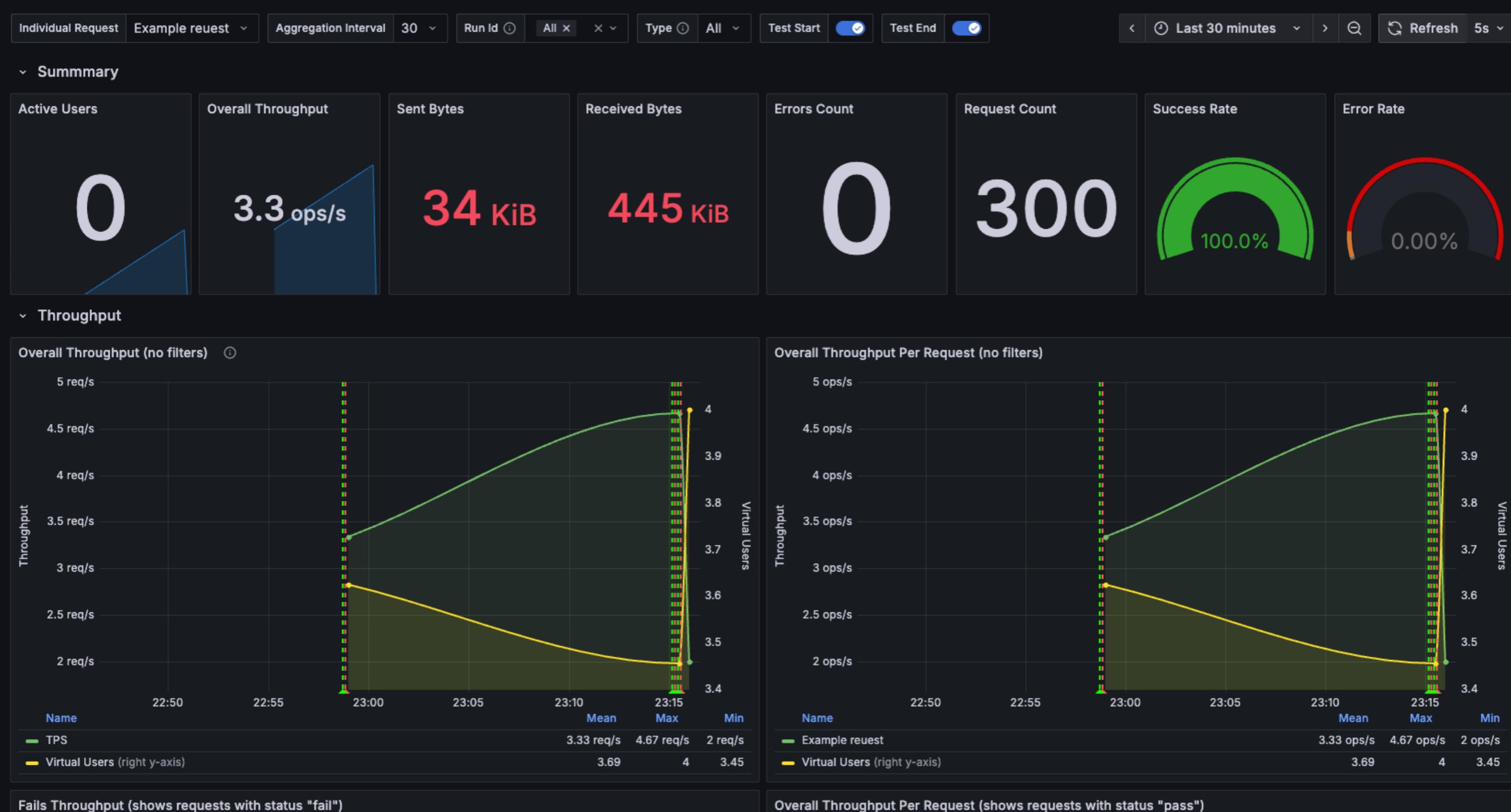
<https://github.com/mderevyankoqa/jmeter-influxdb2-listener-plugin>



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6. Test Report in Grafana



<https://grafana.com/grafana/dashboards/13644-jmeter-load-test-org-md-jmeter-influxdb2-visualizer-influxdb-v2-0-flux/>



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Let's start

