PTV xServer Benchmark Report

PTV xMapmatch 1.24.0.0

PTV XSERVER

the mind of movement

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PTV xServer Benchmark Reports

The PTV xServer Benchmark Report visualizes different aspects of a PTV xServer's performance and benchmarks system throughput.

- Benchmarks are categorized by platform, scaling behavior, PTV transportation technology and server version.
- Benchmarks are measured client side (roundtrips).

Reference Environment

The following specifications describe the host system that is used for benchmarking in this report. These specifications must not be met exactly. However, similar performances can also be achieved on less powerful machines (e.g. with only 16 GB of physical memory and a 100 MBit Ethernet client/server connection).

PTV xServer Version
- PTV xMapmatch 1.24.0.0

Map Data
- eu-2015-1H
- FeatureLayer
  - TruckAttributes
  - SpeedPatterns
  - RestrictionZones
  - PreferredRoutes
  - TrafficIncidents
- HBEFA 3.1 Emission Data

Operating Systems
- Microsoft® Windows 2012 Server
- Red Hat® Enterprise Linux® 6.2

Hardware
- HP ProLiant DL360 G7
- Intel® Xeon® E5645 CPUs
- 2.4 GHz, 6 core(s)
- 12 logic processor(s)
- 64 GB physical memory
- 1 GBit Ethernet client connection via local network

Test Suites

The following selected use cases are used for this benchmark report. They show the influence of the number of track positions on local and history based matching performances of the PTV xMapmatch server.

shortHistory

- 20 matchTrack() requests with default profile
- 50 positions per request

longHistory

- 20 matchTrack() requests with default profile
- 5000 positions per request

shortLocal

- 20 matchTrack() requests with local-matching profile
- 50 positions per request

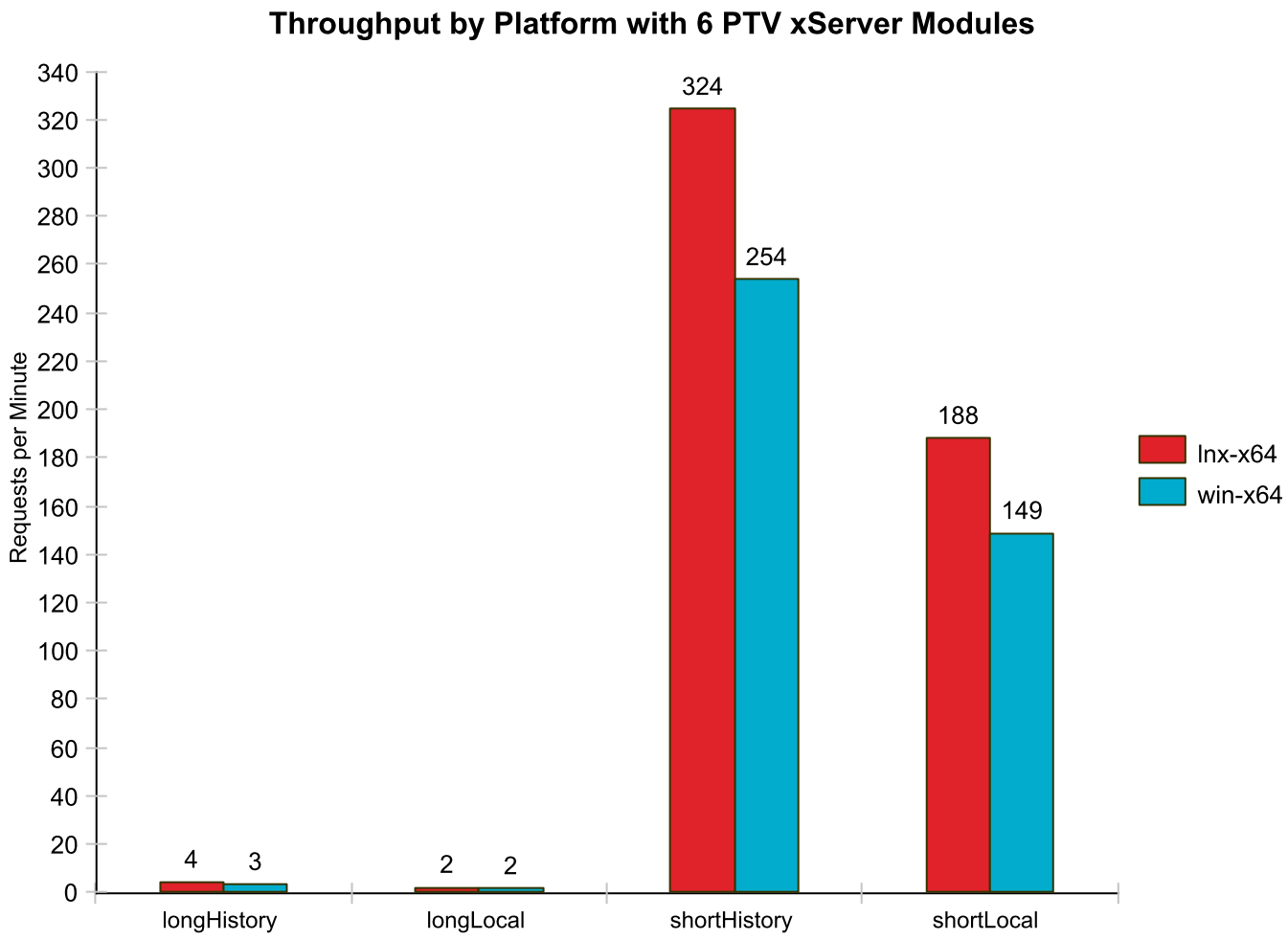
longLocal

- 20 matchTrack() requests with local-matching profile
- 5000 positions per request

Throughput Overview

Throughput is measured with the following configuration:

- 6 PTV xServer modules
- 20 SOAP clients

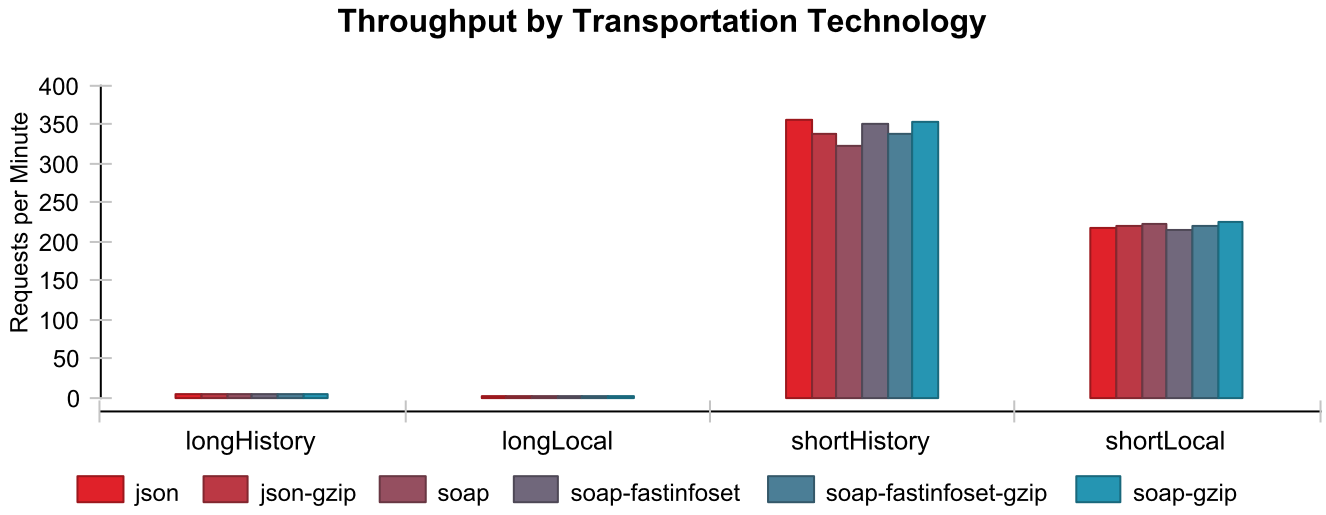


Transportation Technologies

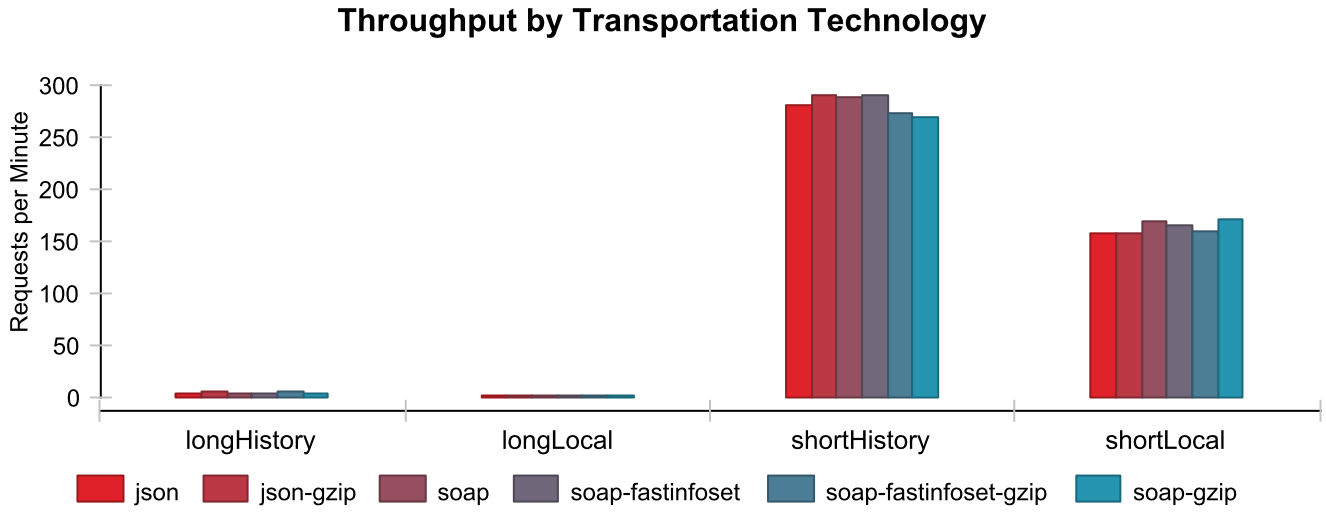
The different supported communication protocols affect the format of requests. Encoding, size and compression type have influence on their performances. The throughput is measured with the following configuration:

- 12 PTV xServer modules
- 20 SOAP clients

lnx-x64



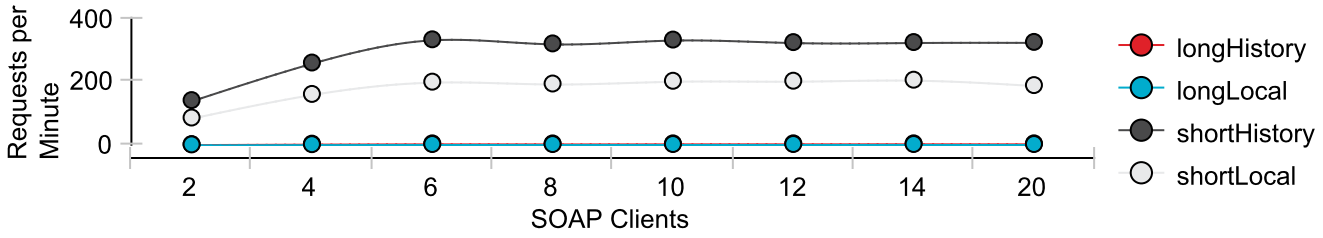
win-x64



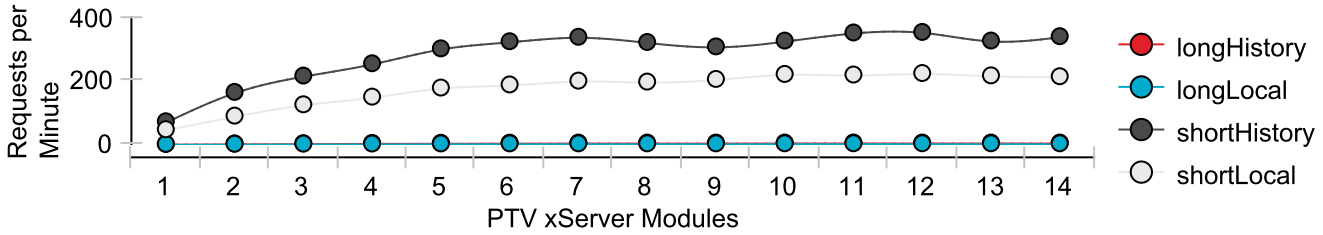
Scaling Comparison

These diagrams show the client and server scaling behavior of PTV xServer. Depending on the operating system, API call or use case, PTV xServer scale differently. In general, computational-intensive use cases scale better than IO-intensive use cases. API calls with tiny payloads and fast response times scale worse than slow API calls with huge request or response data.

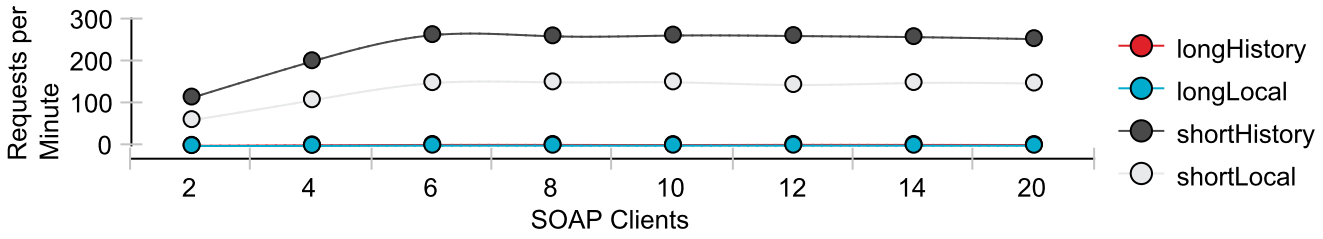
lnx-x64, Throughput Scaling with 6 PTV xServer Modules



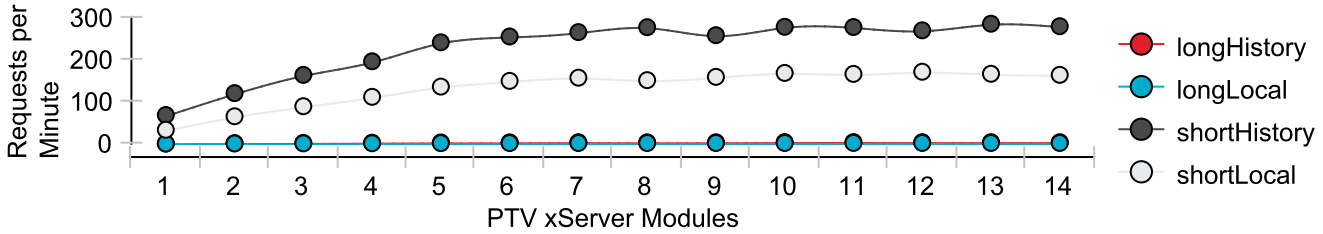
lnx-x64, Throughput Scaling with 20 SOAP Clients



win-x64, Throughput Scaling with 6 PTV xServer Modules



win-x64, Throughput Scaling with 20 SOAP Clients

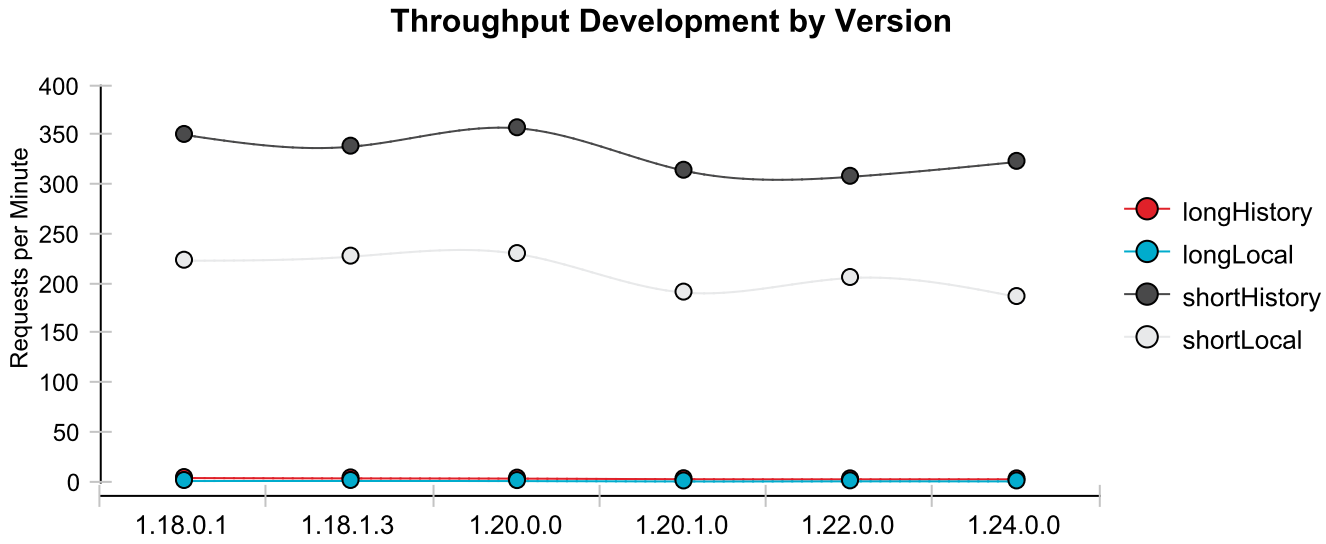


Version Comparison

Quality and performance improvements change throughput of different PTV xServer versions for a given map and use case. Changes are measured with the following configuration:

- 6 PTV xServer modules
- 20 SOAP clients

lnx-x64



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