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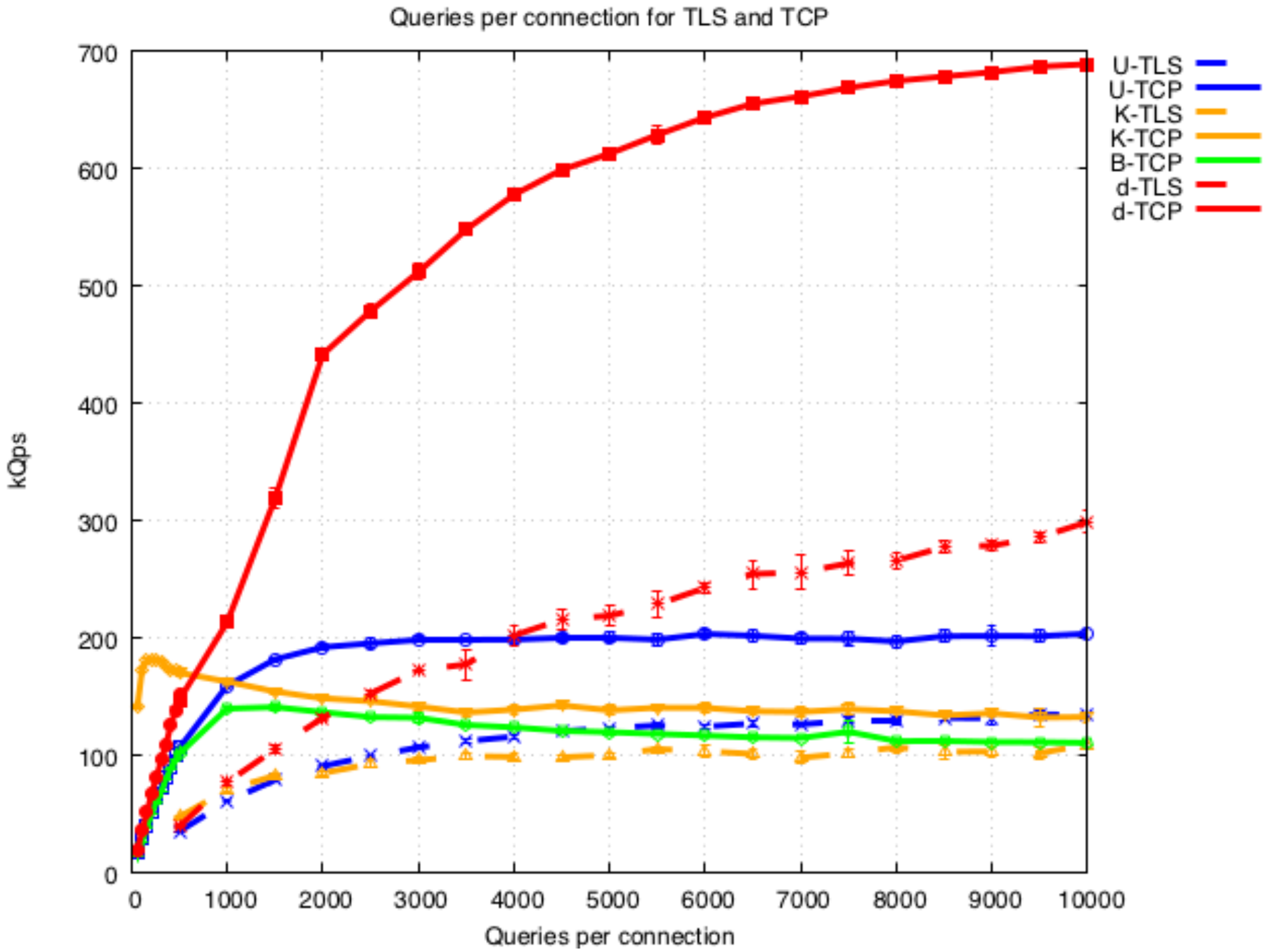
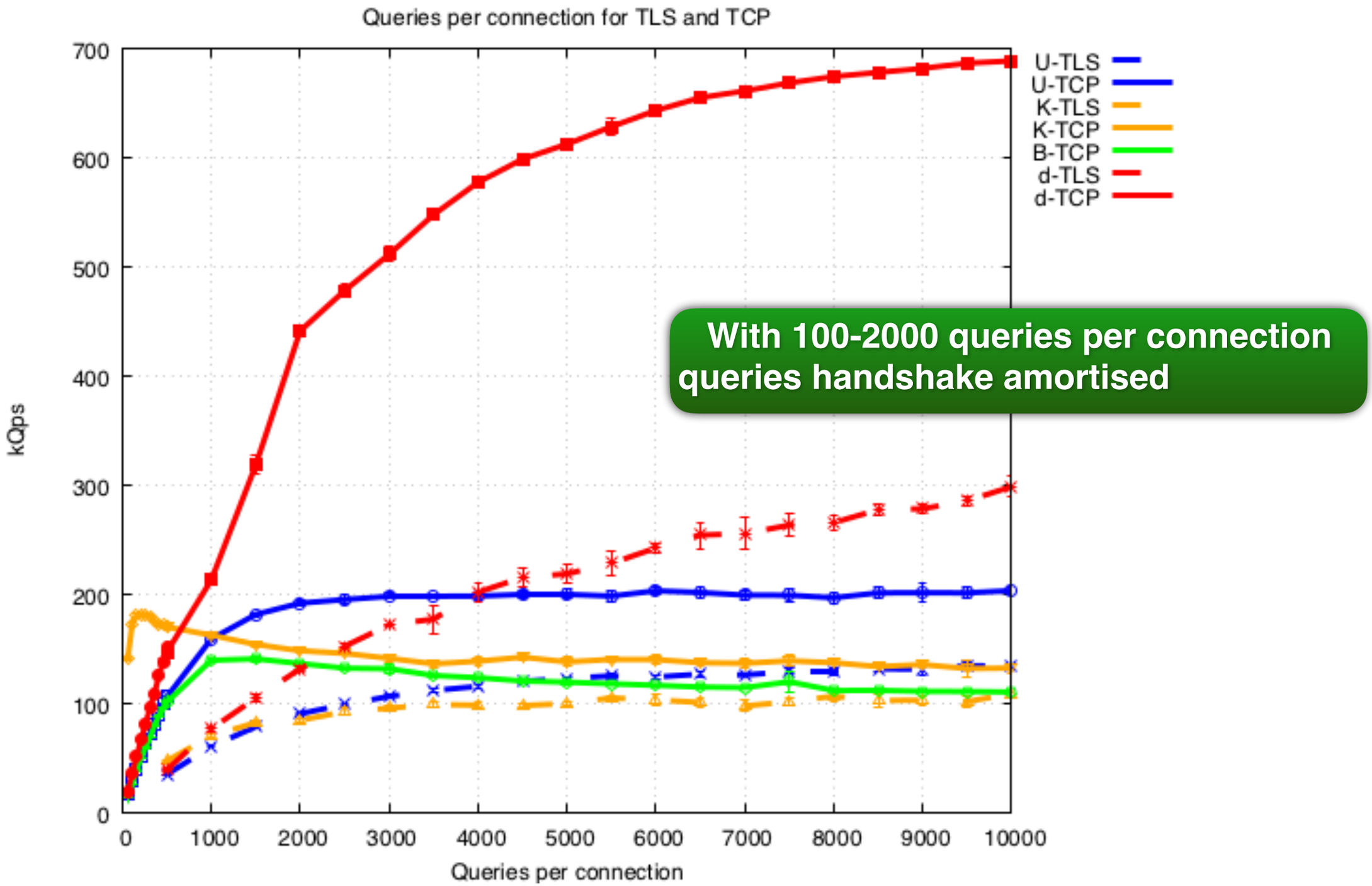
RIPE 76

- Using 8 clients
- Solid line is TCP, doted is TLS



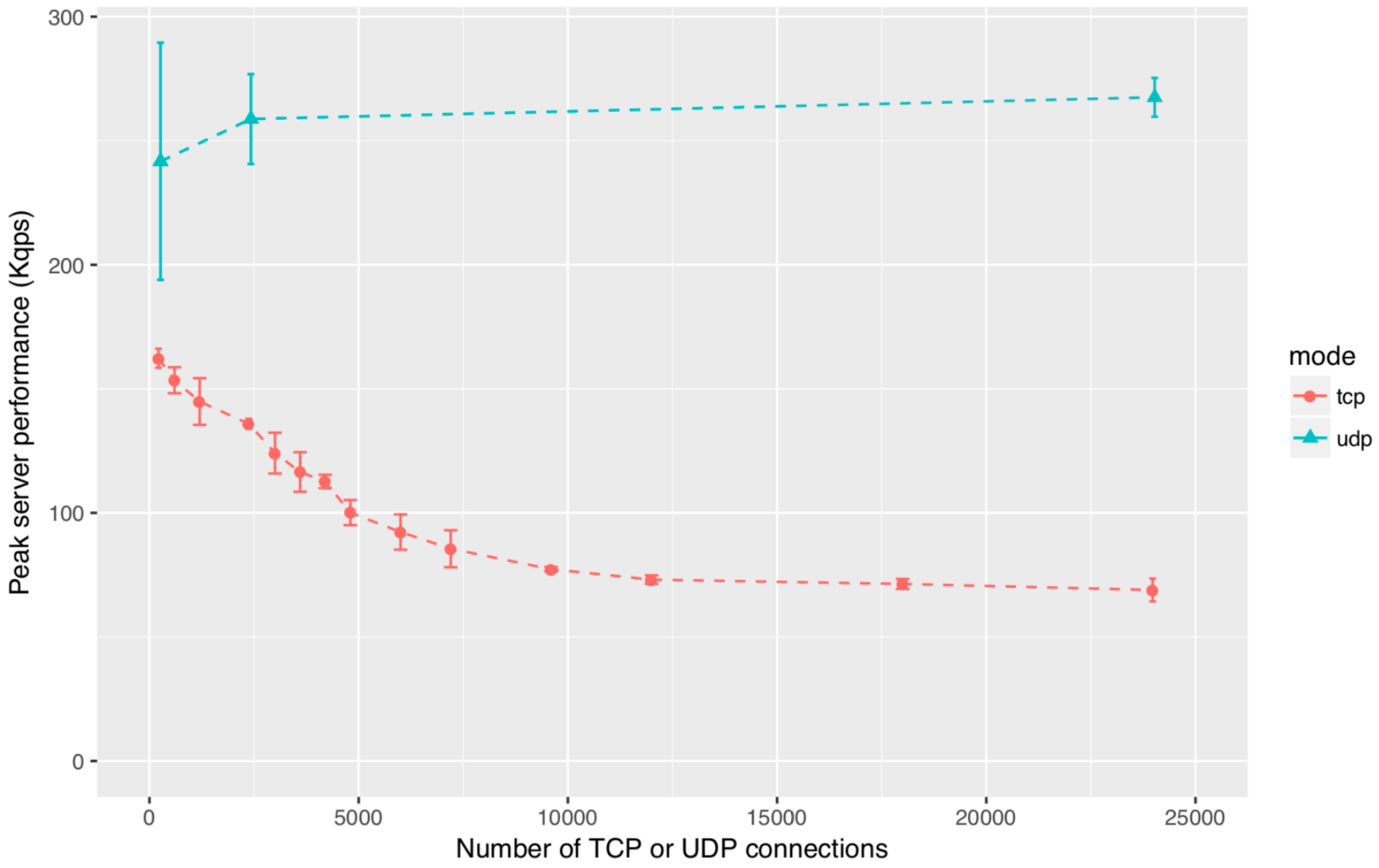
- Using 8 clients
- Solid line is TCP, doted is TLS



With 100-2000 queries per connection queries handshake amortised

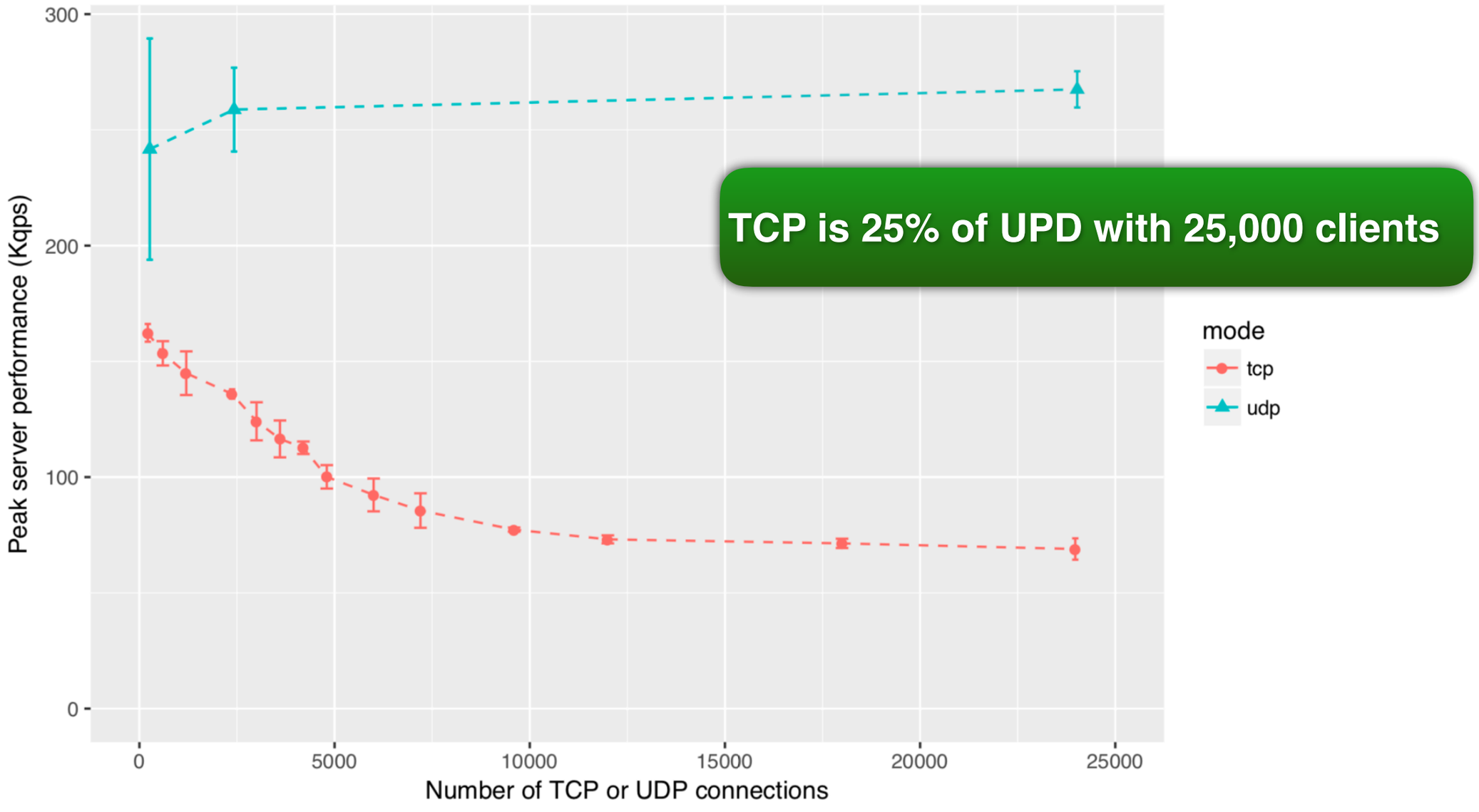
- 30k con per client VM
- Unbound

UDP/TCP comparison



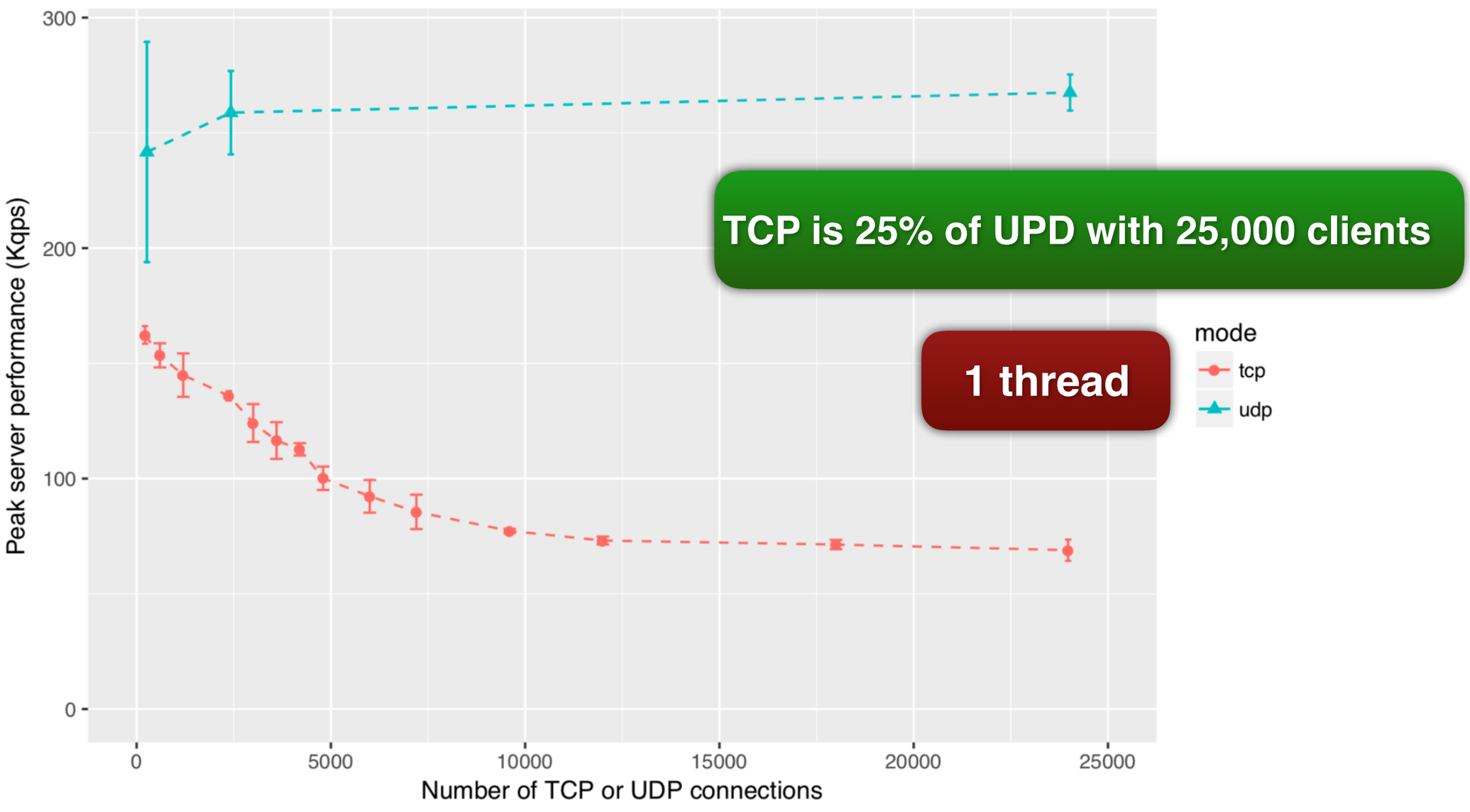
- 30k con per client VM
- Unbound

UDP/TCP comparison

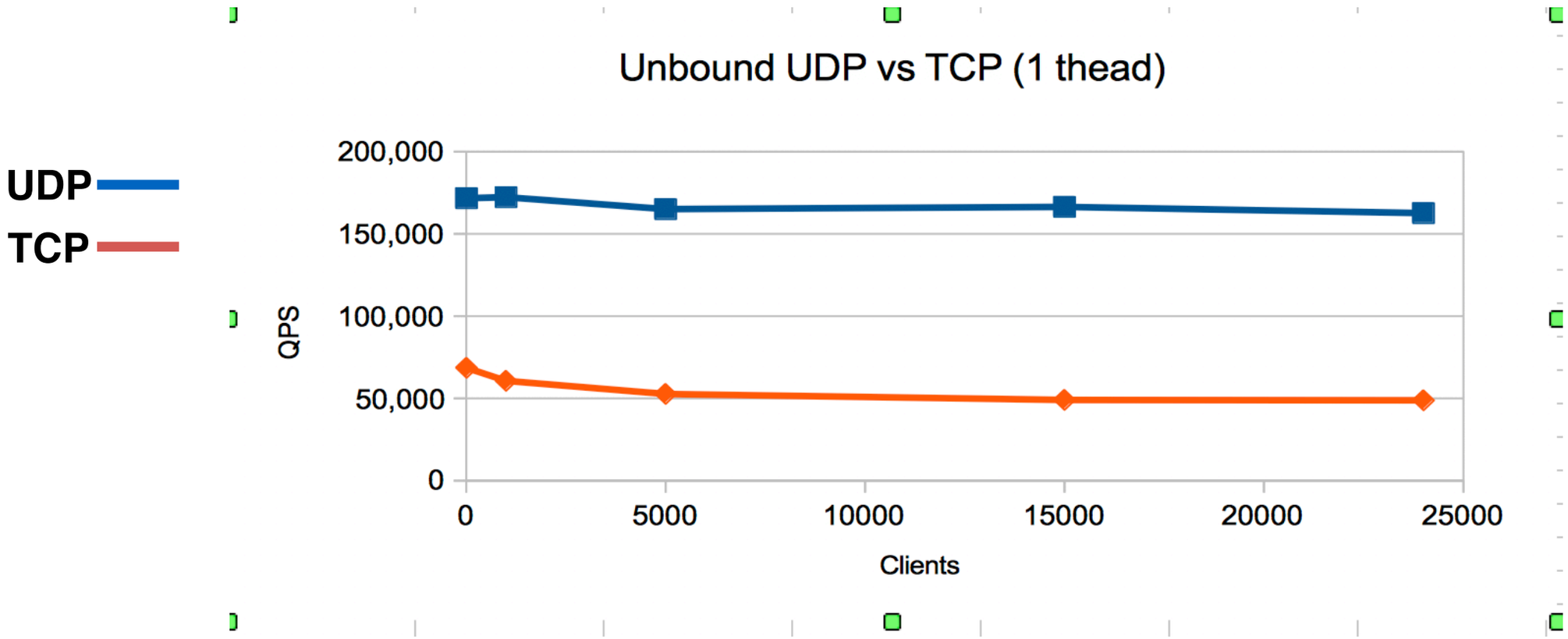


TCP is 25% of UPD with 25,000 clients

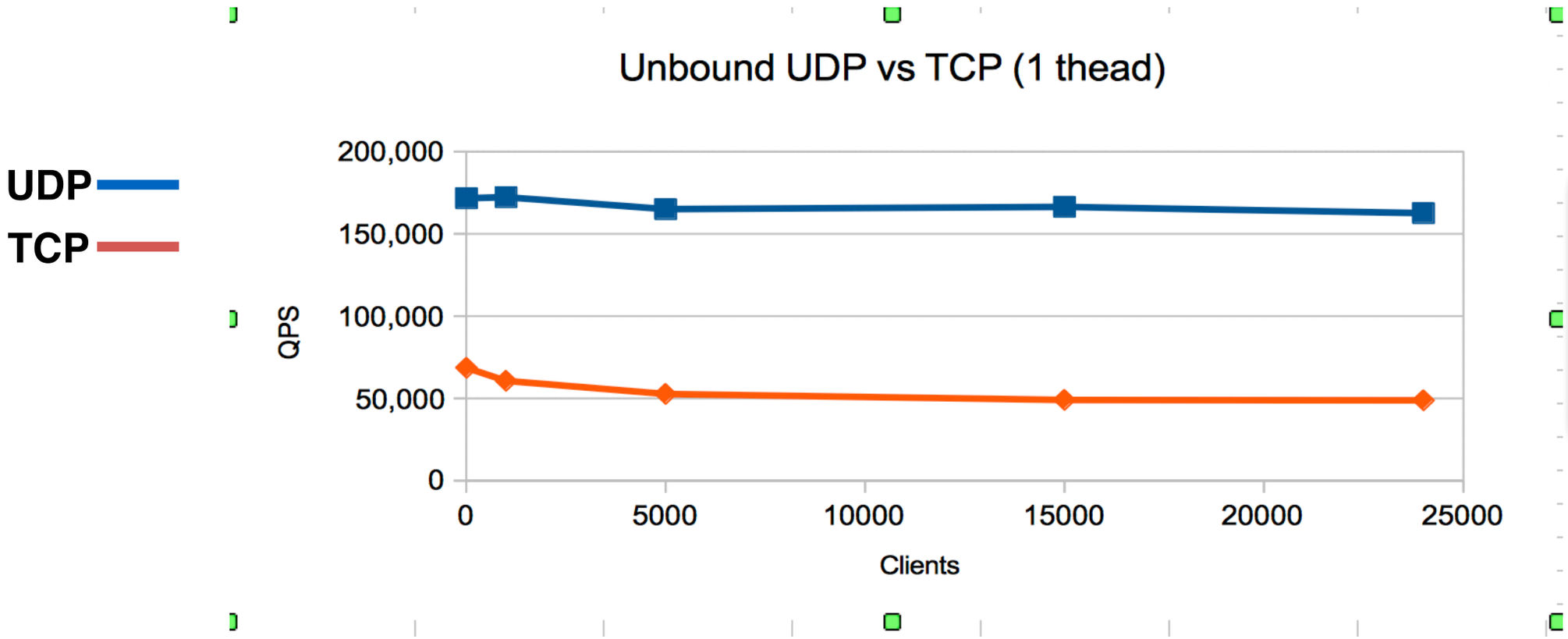
- 30k con per client VM
- Unbound



25,000 clients
5000 q/con

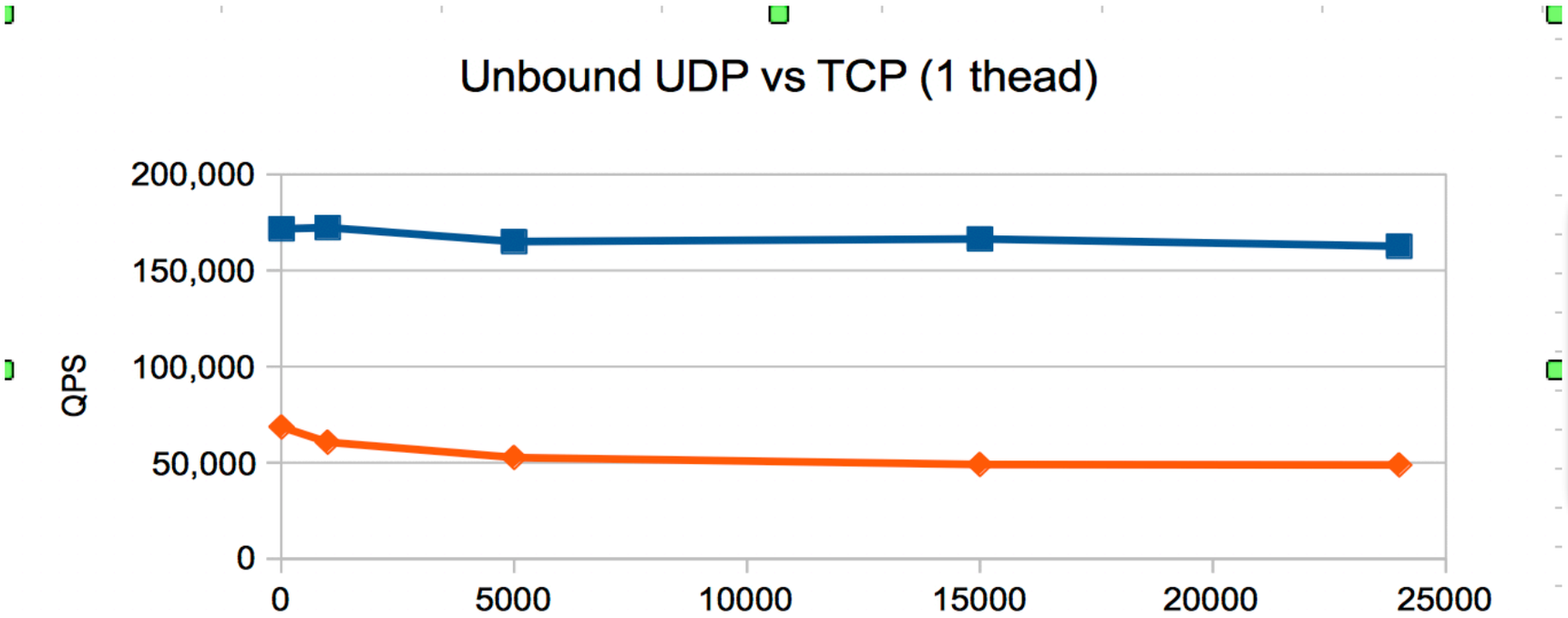


25,000 clients
5000 q/con



1 thread
160 kqps
TCP ~32 %

25,000 clients
5000 q/con



1 thread
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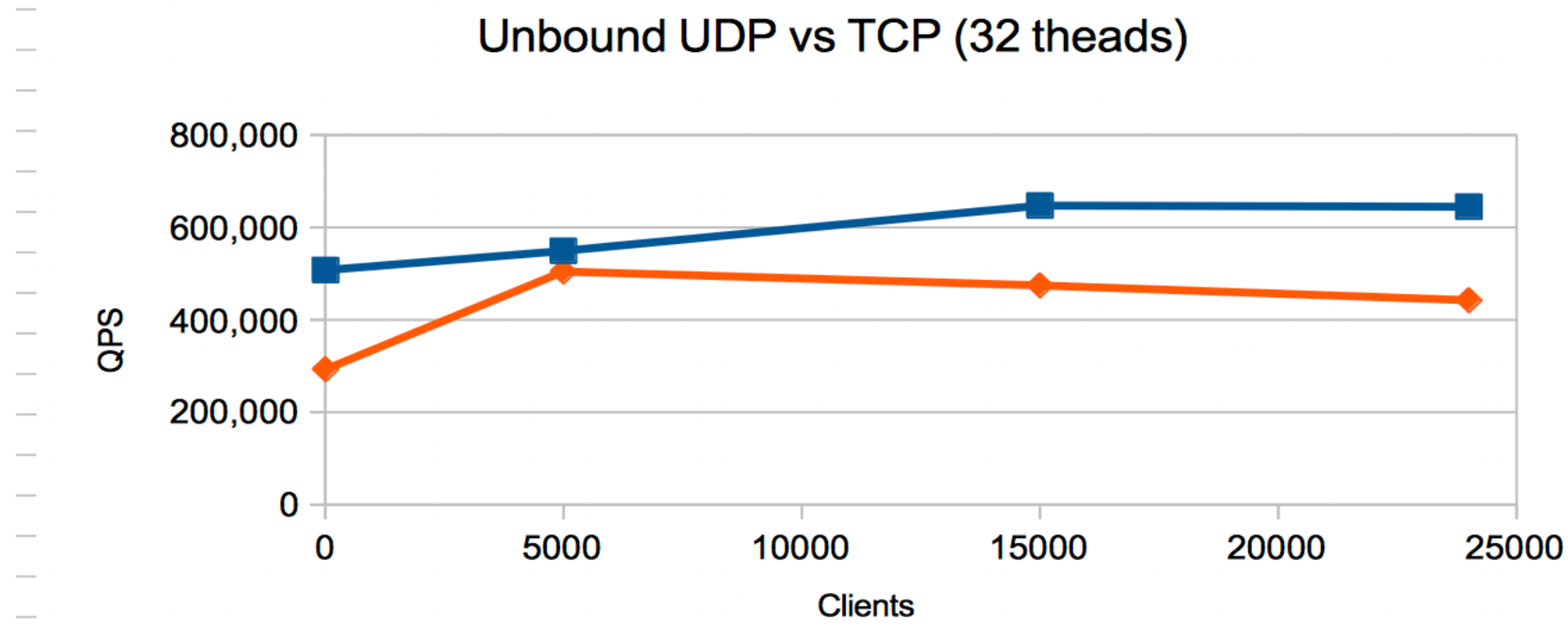
TCP ~32 %



25,000 clients
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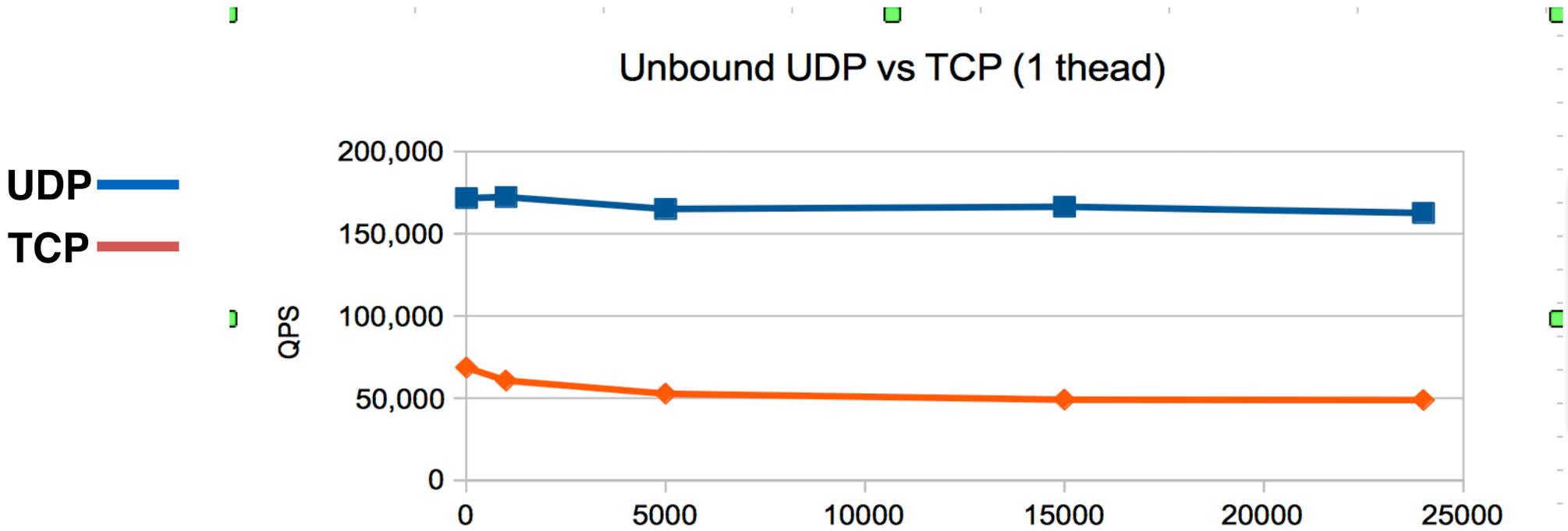
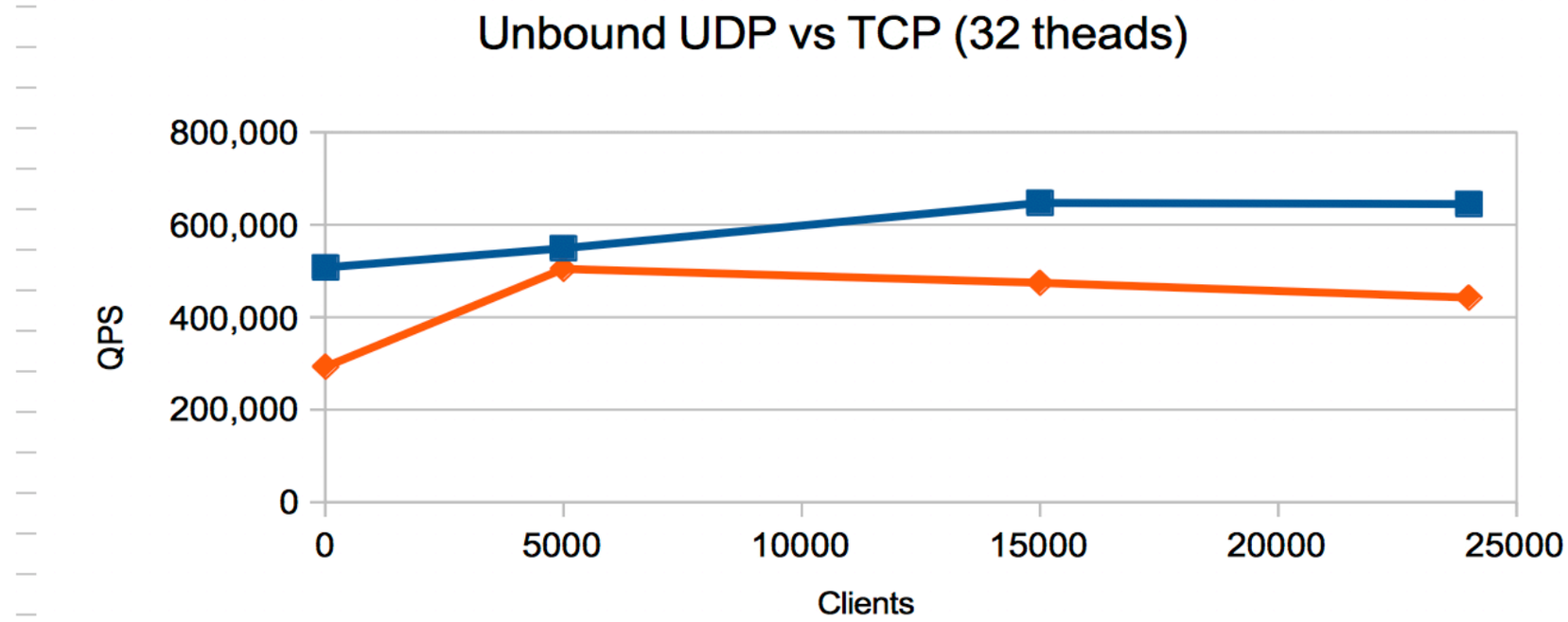
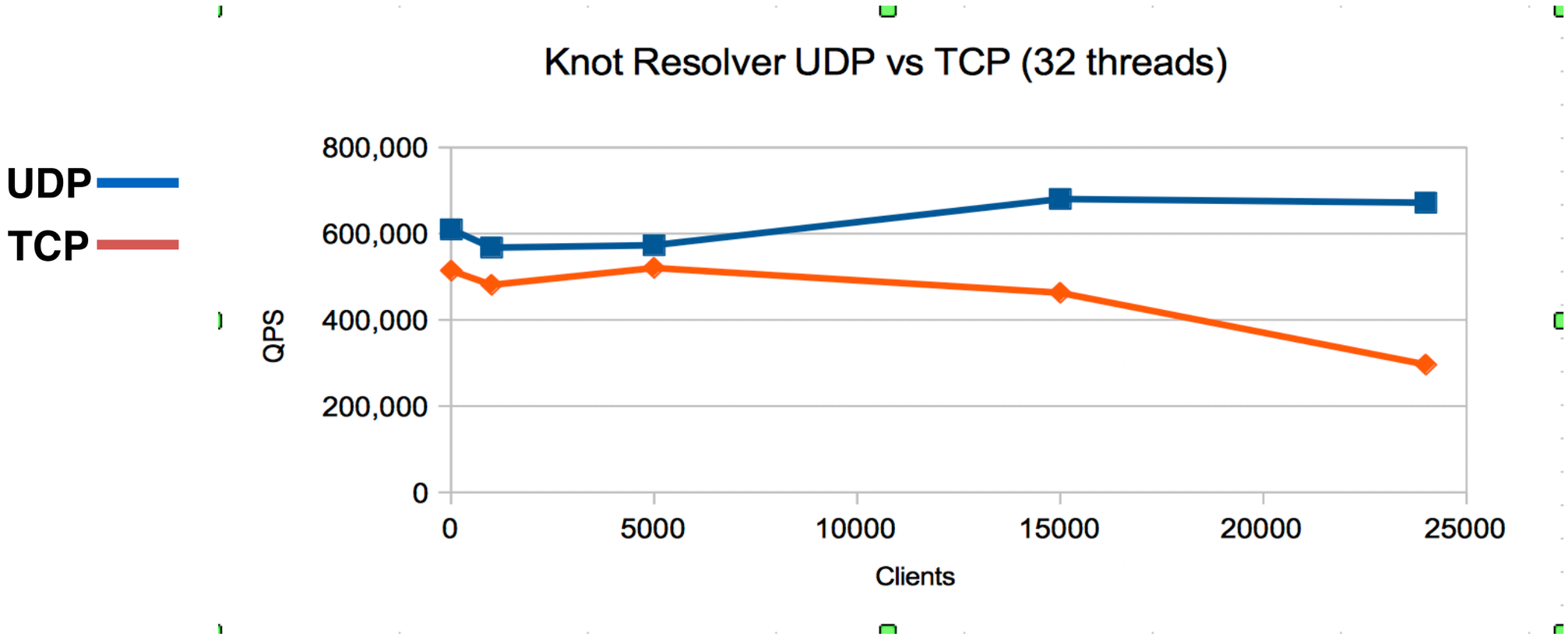


1 thread
160 kqps
TCP ~32 %

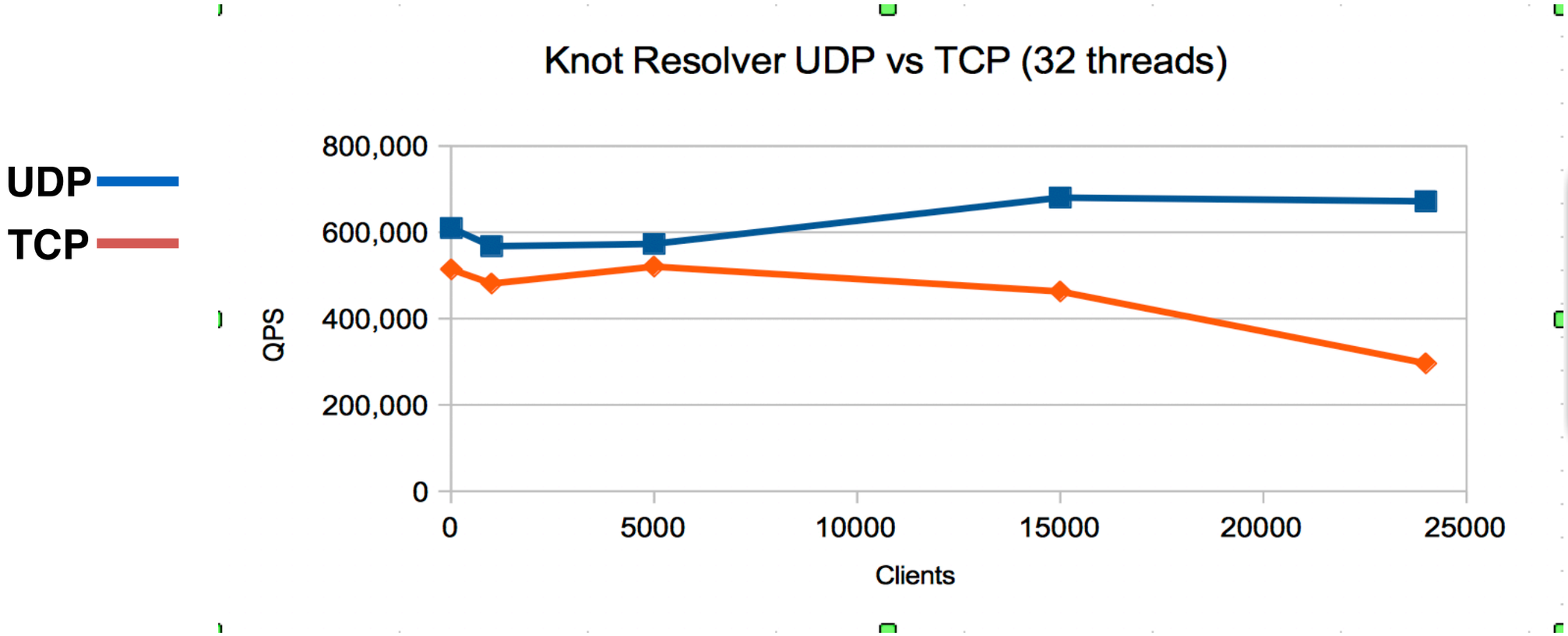


32 threads
620 kqps
TCP ~67 %

25,000 clients
5000 q/con

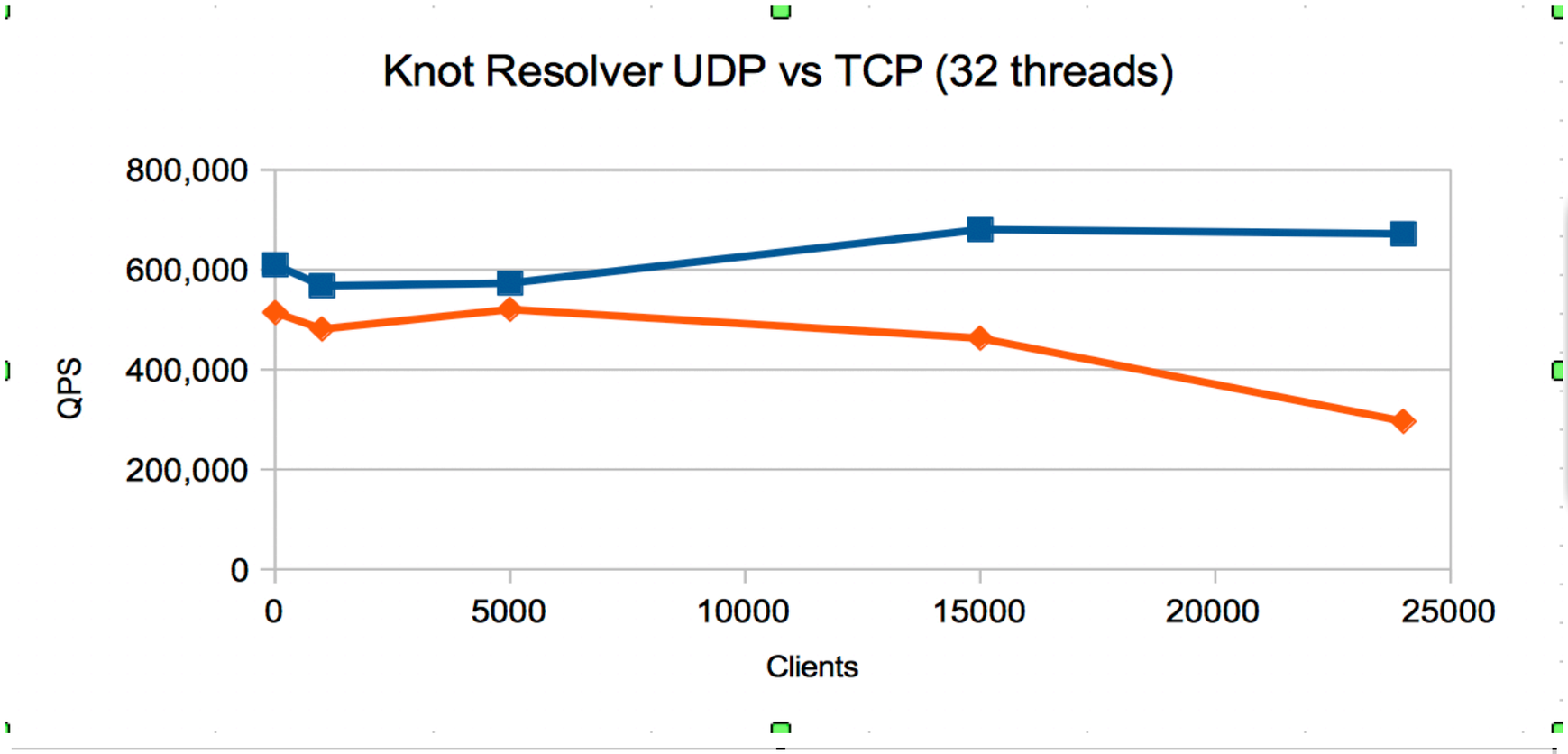


25,000 clients
5000 q/con



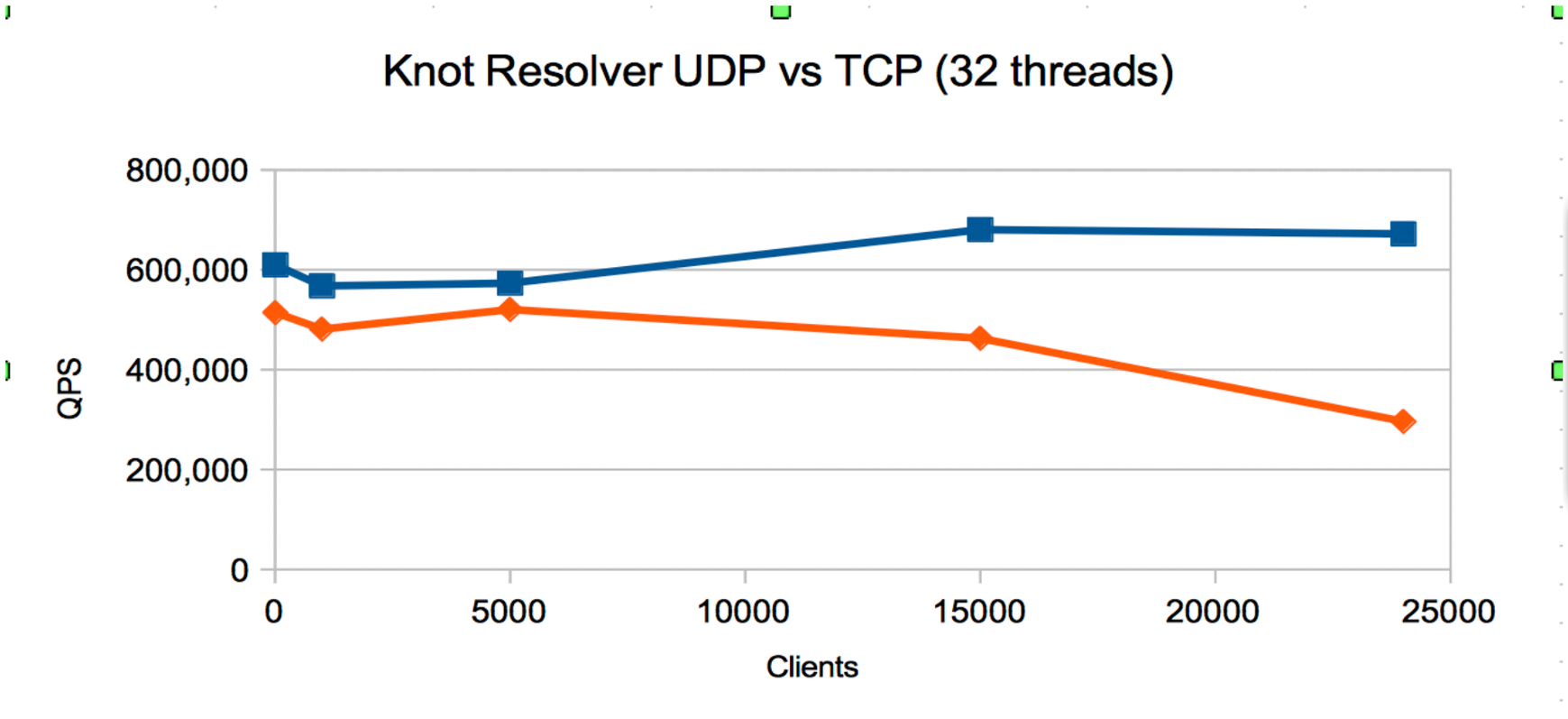
600 kqps
TCP ~50 %

25,000 clients
5000 q/con

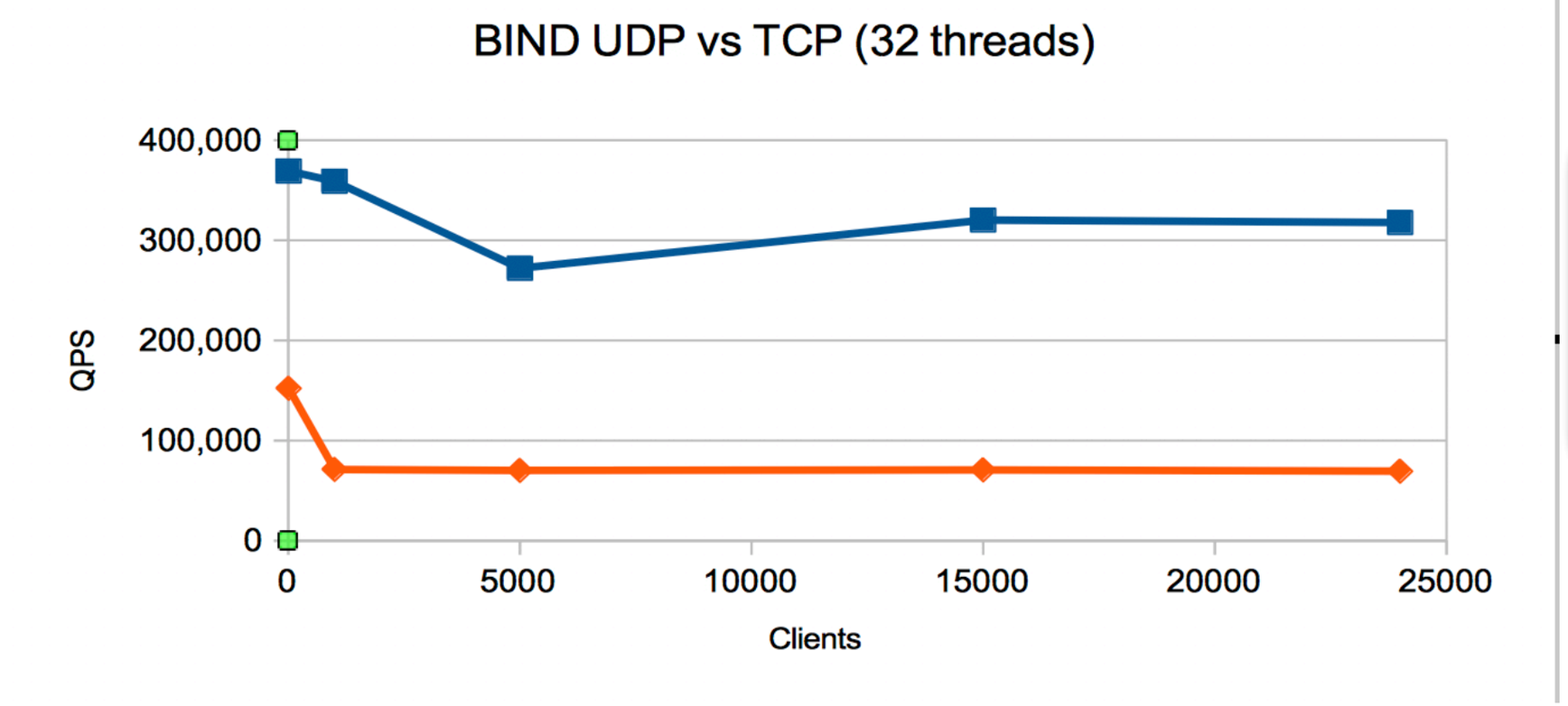


600 kqps
TCP ~50 %

25,000 clients
5000 q/con



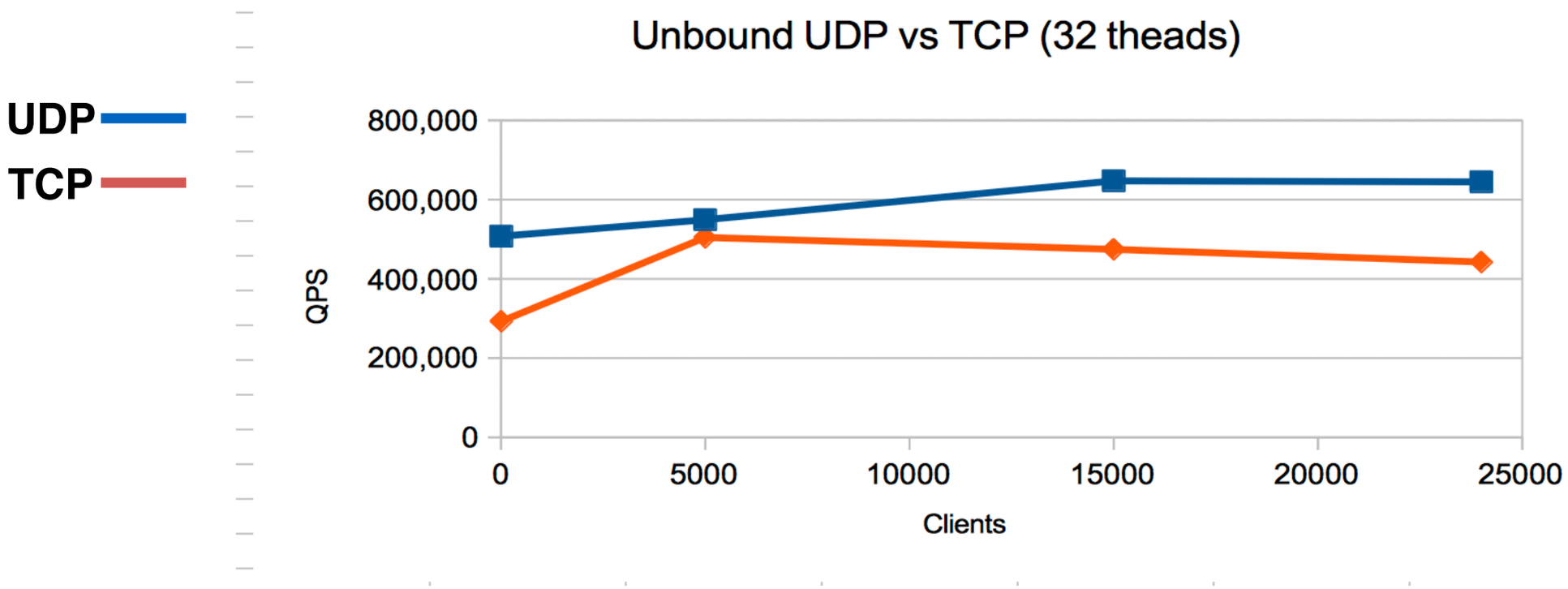
600 kqps
TCP ~50 %



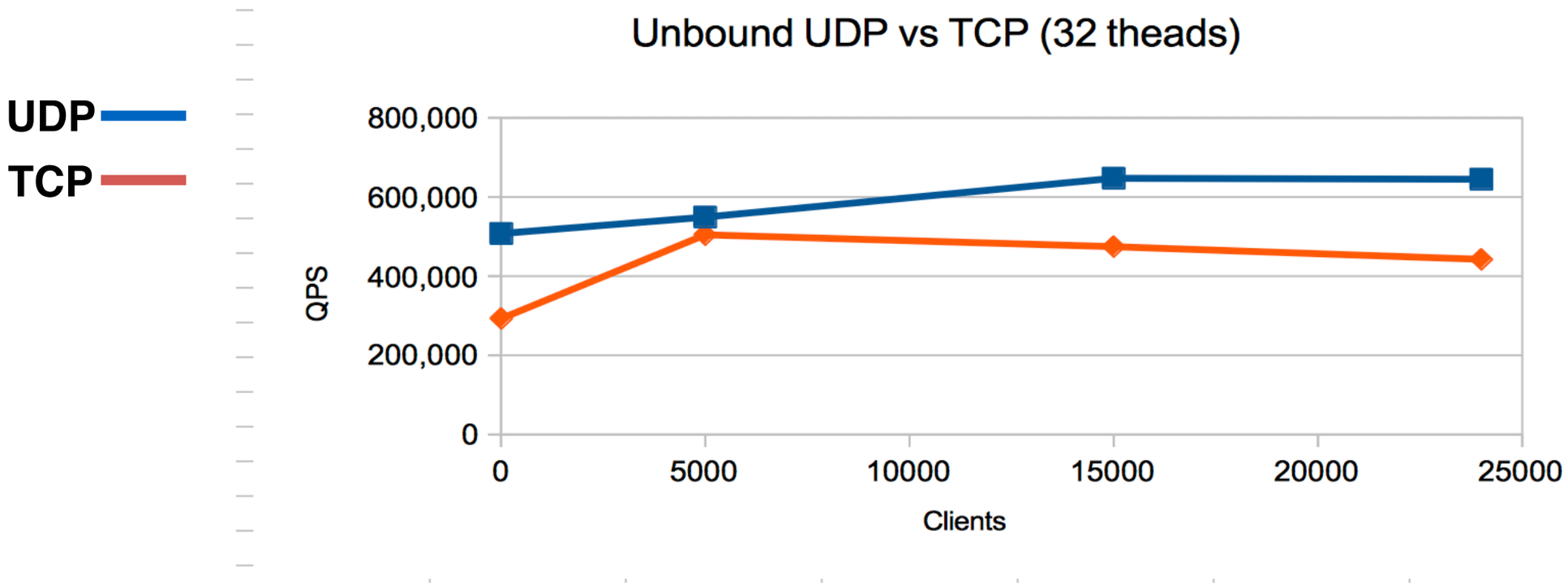
310 kqps
TCP ~25 %


MY WORK HERE IS DONE
RIGHT?

25,000 clients
5000 q/con

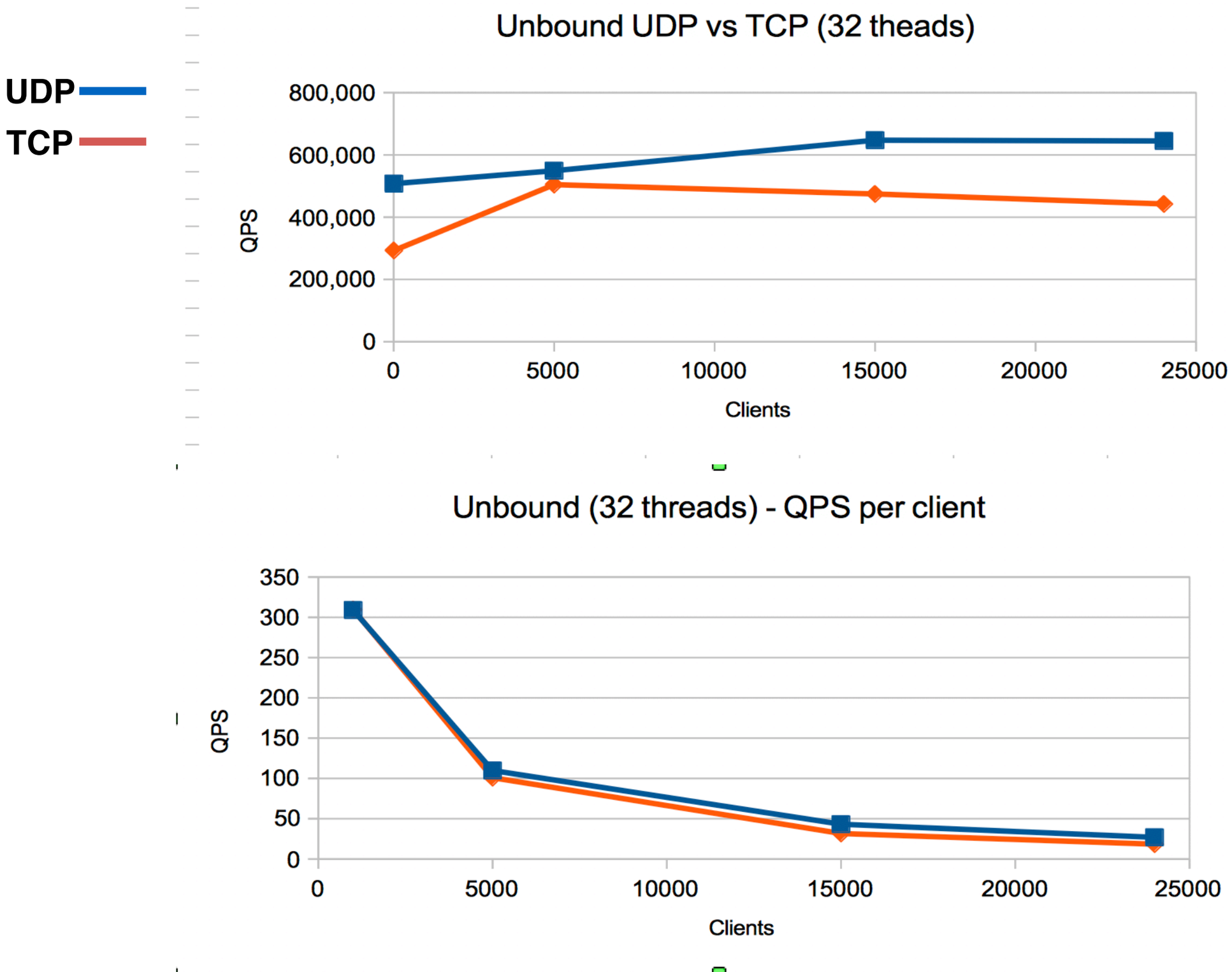


25,000 clients
5000 q/con



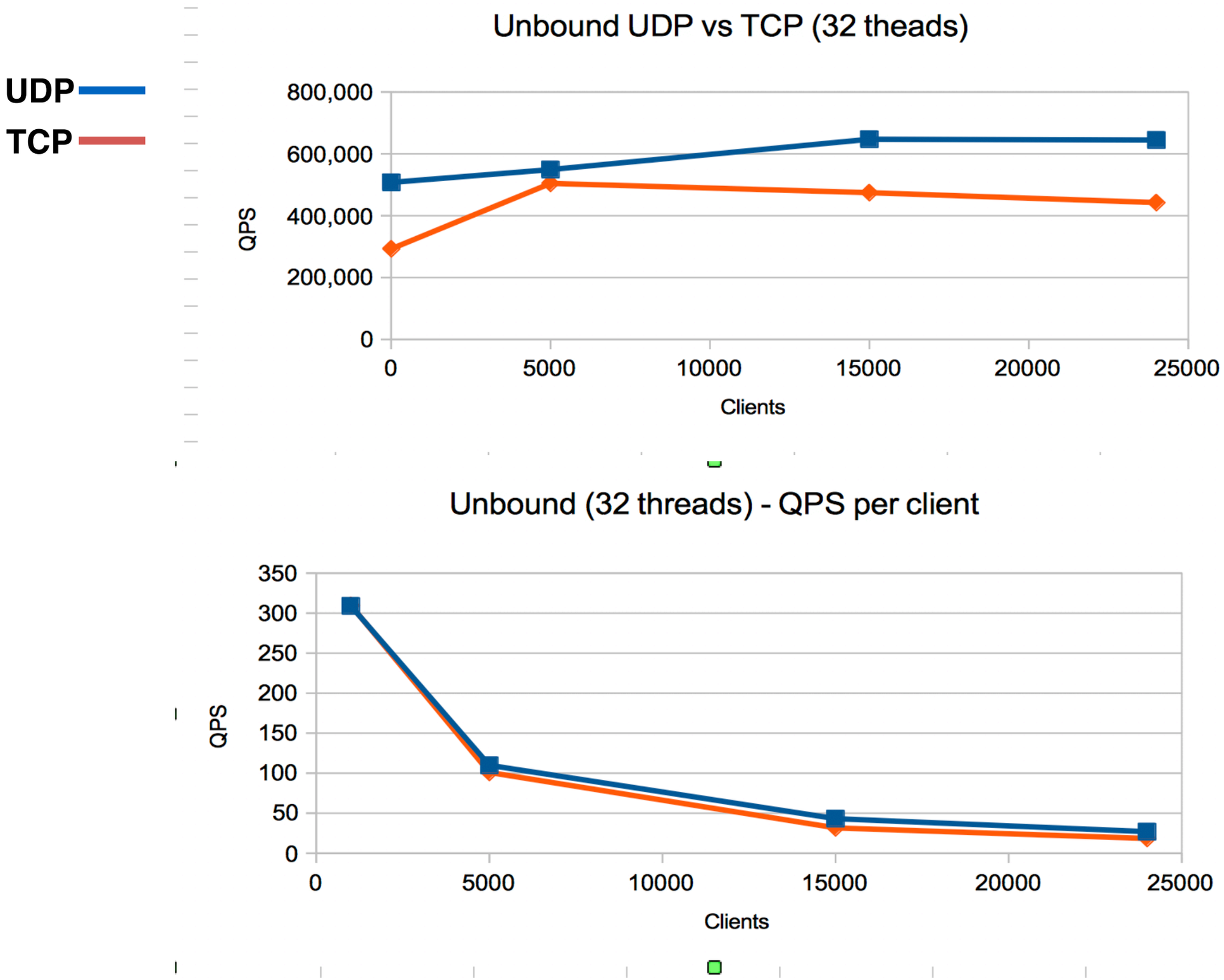
TCP
410 kqps

25,000 clients
5000 q/con



TCP
410 kqps

25,000 clients
5000 q/con



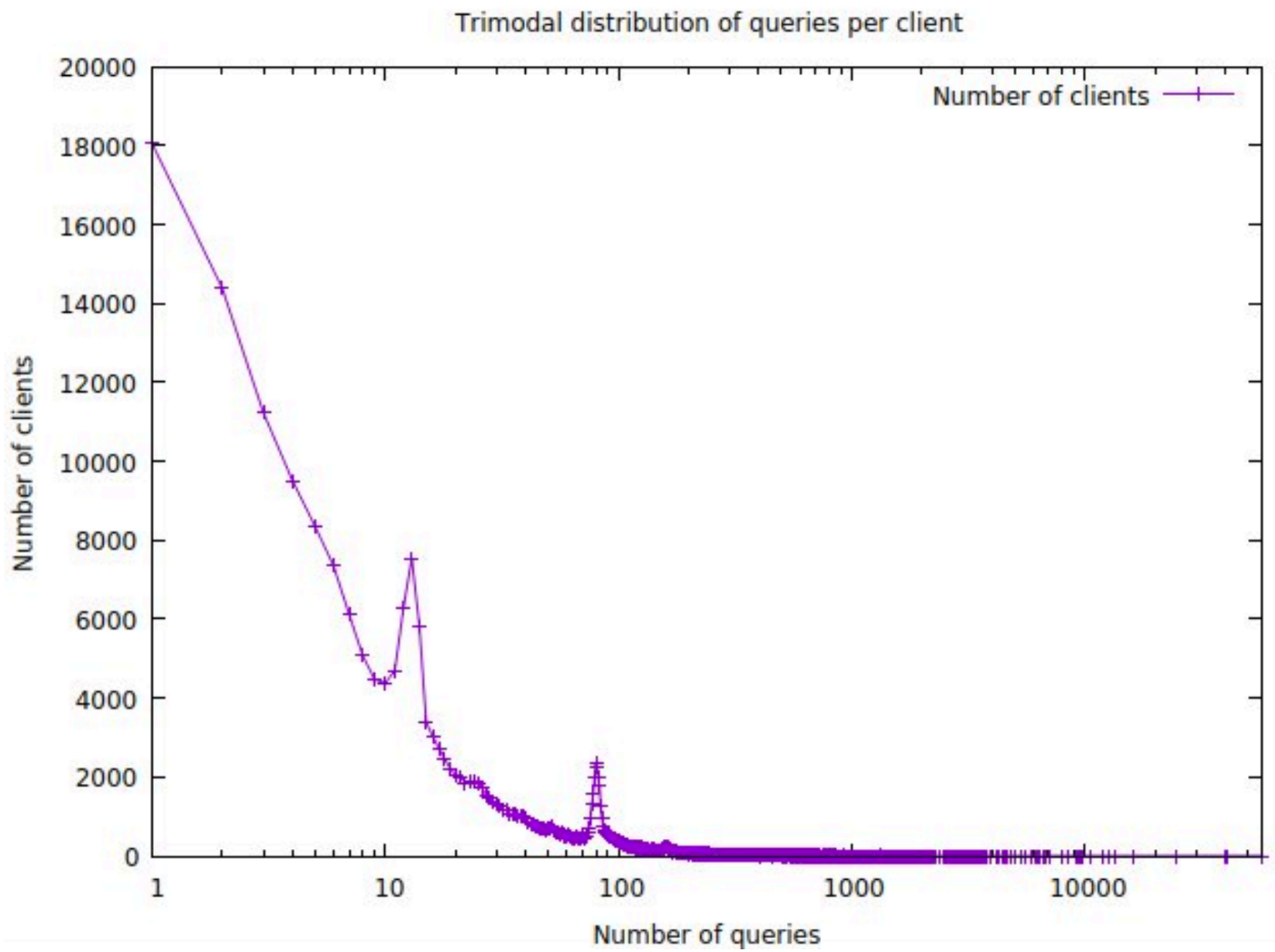
TCP 410 kqps

Client View: ~ 20 qps per client

This is a typical approach of HTTP benchmarking software, but very little data for DNS

Courtesy of Bert Hubert, PowerDNS

7 minutes (420s) of traffic
~250k clients



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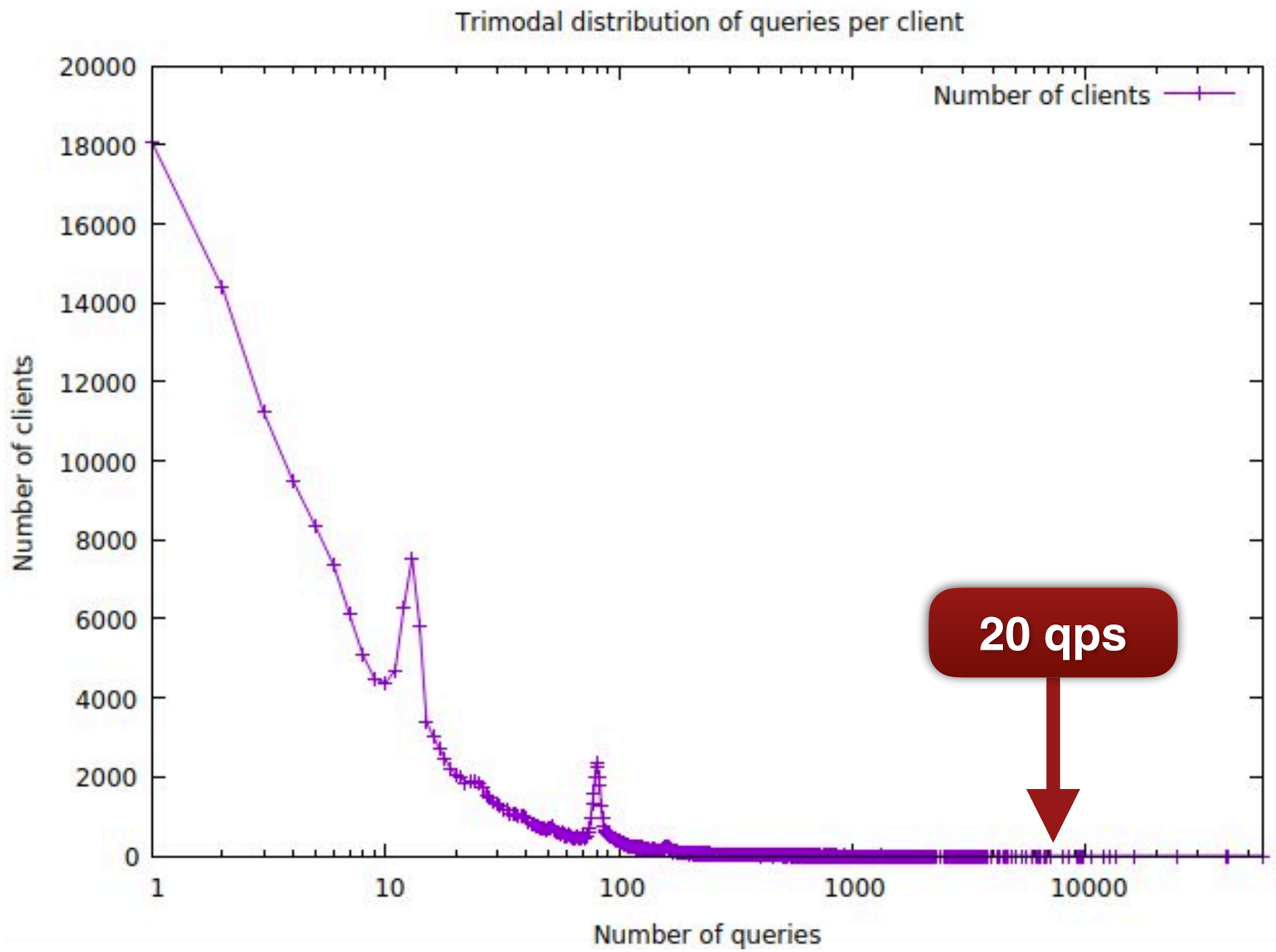

Courtesy of Bert Hubert, PowerDNS

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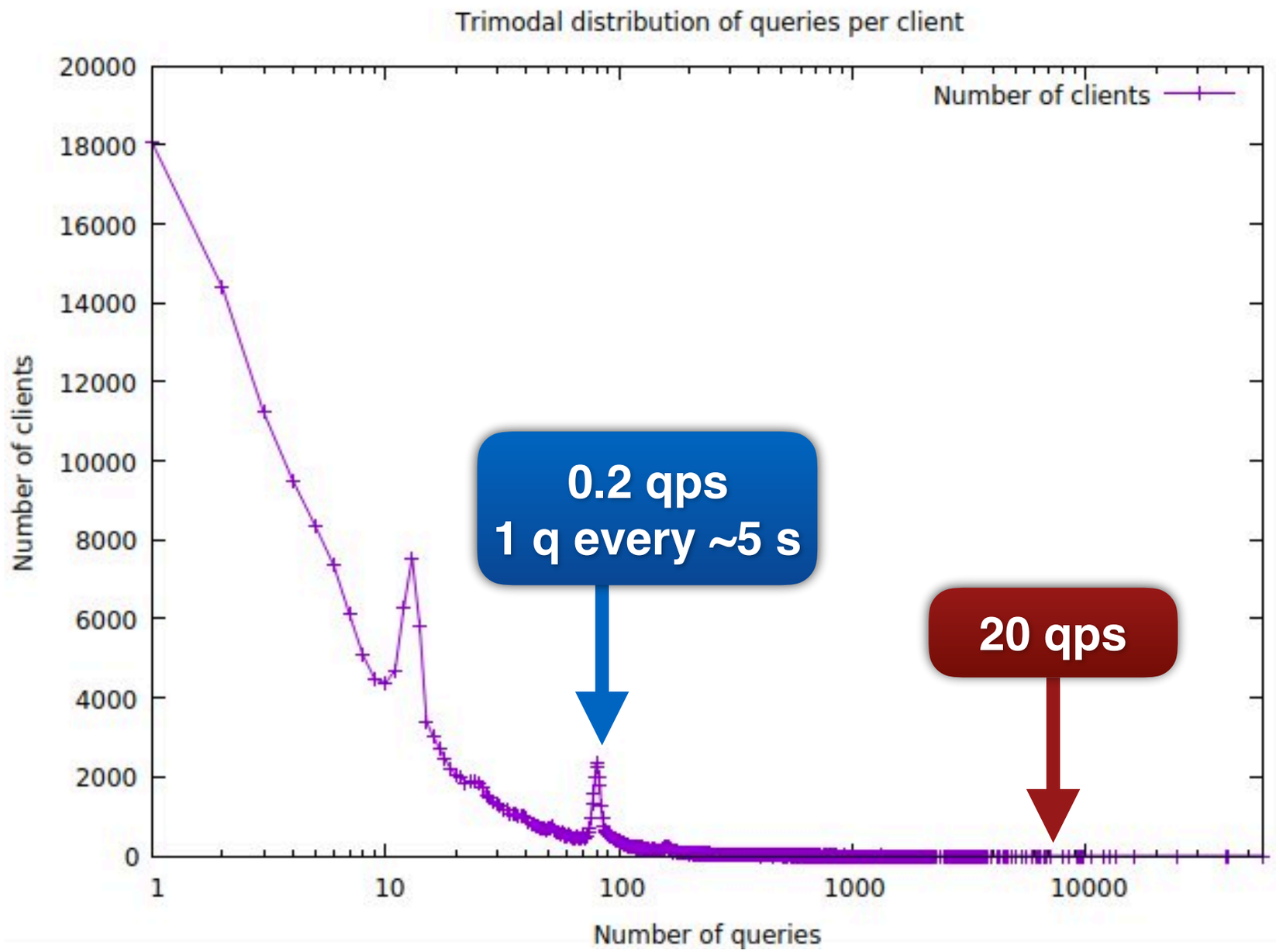

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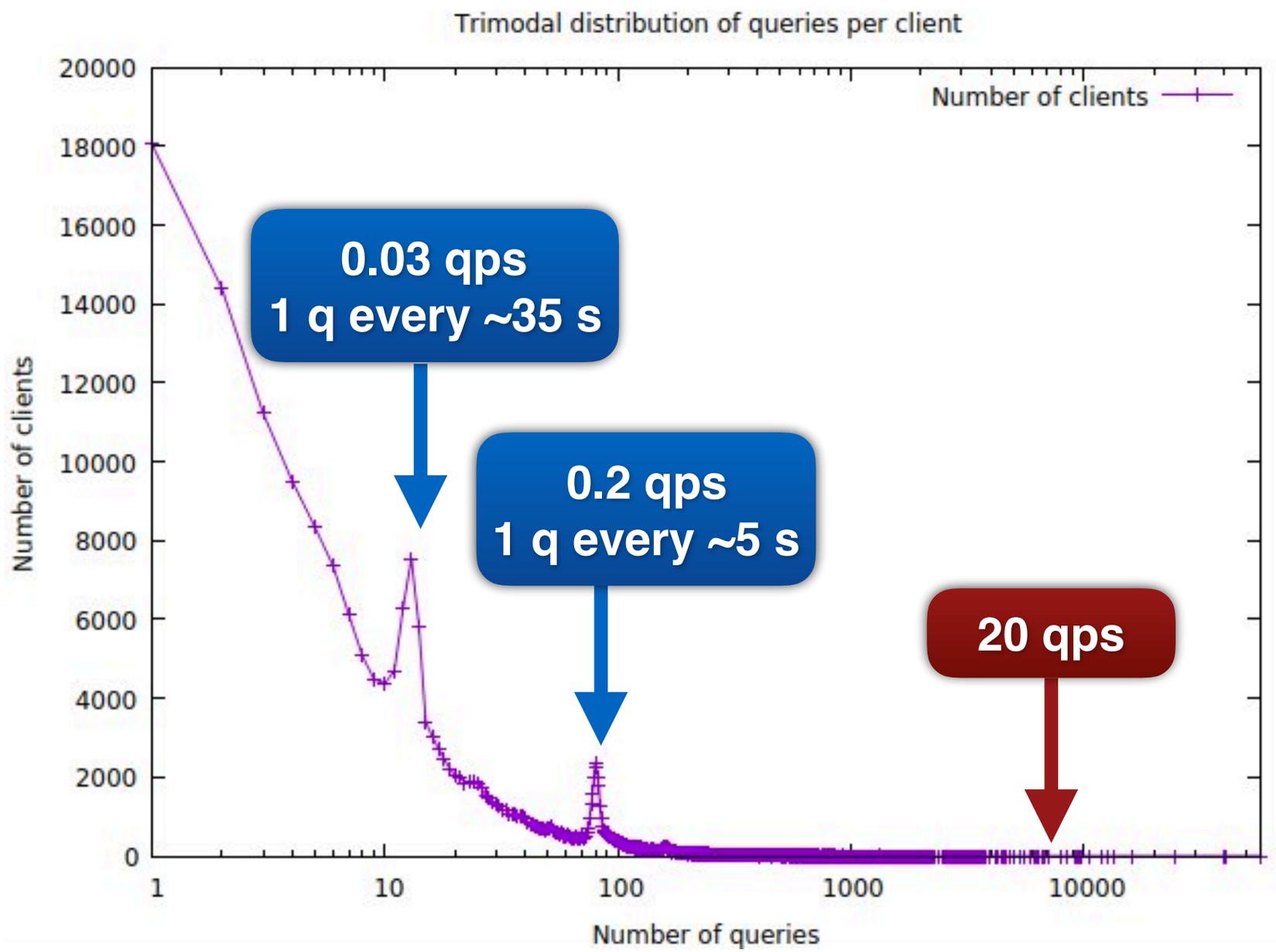

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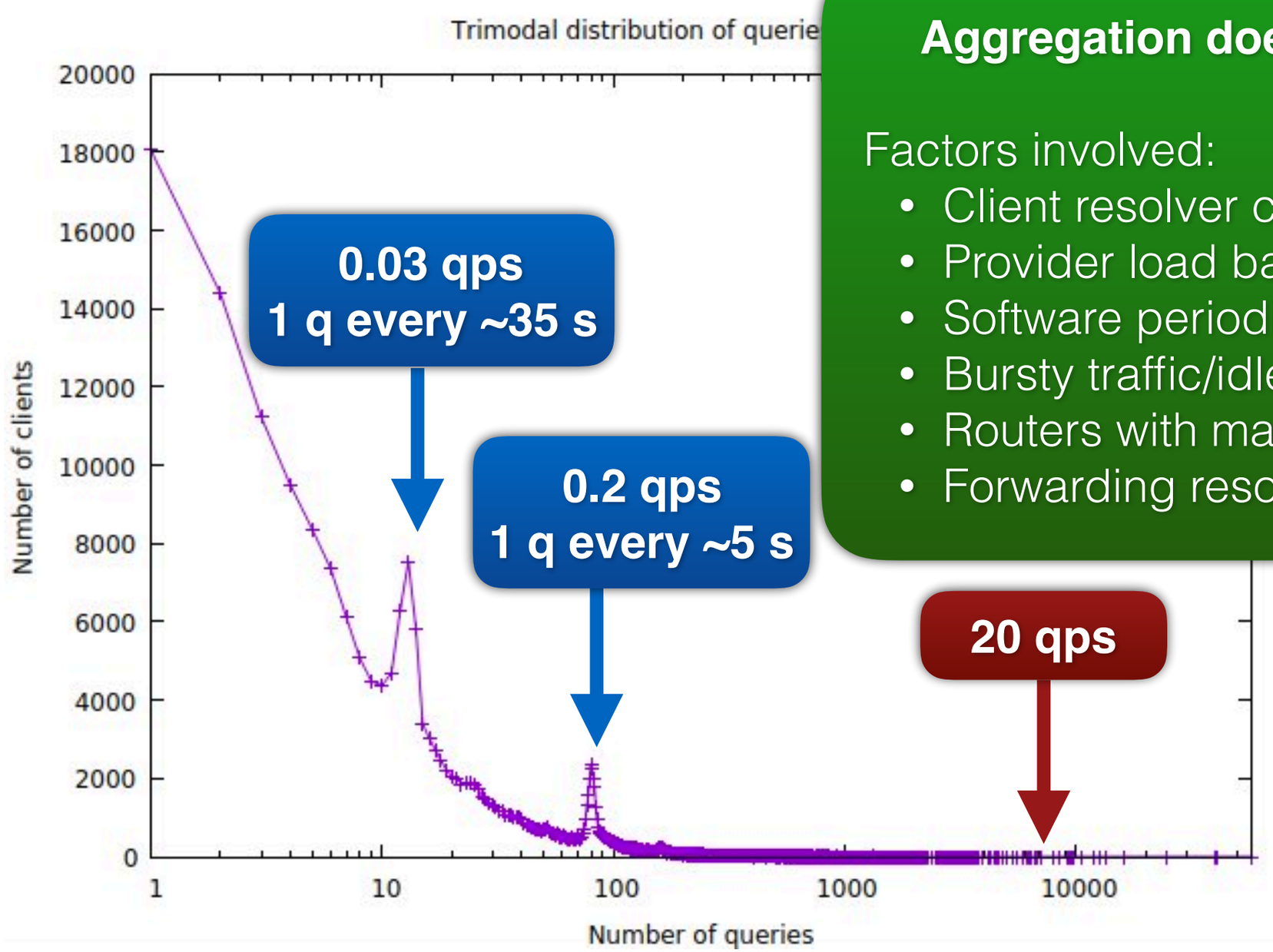

Aggregation doesn't apply!

Factors involved:

- Client resolver choice
- Provider load balancing
- Software periodic probing
- Bursty traffic/idle time
- Routers with many devices
- Forwarding resolvers

k6

Tsung

Would like to avoid needing large client farms


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‘Out of the box’ testing