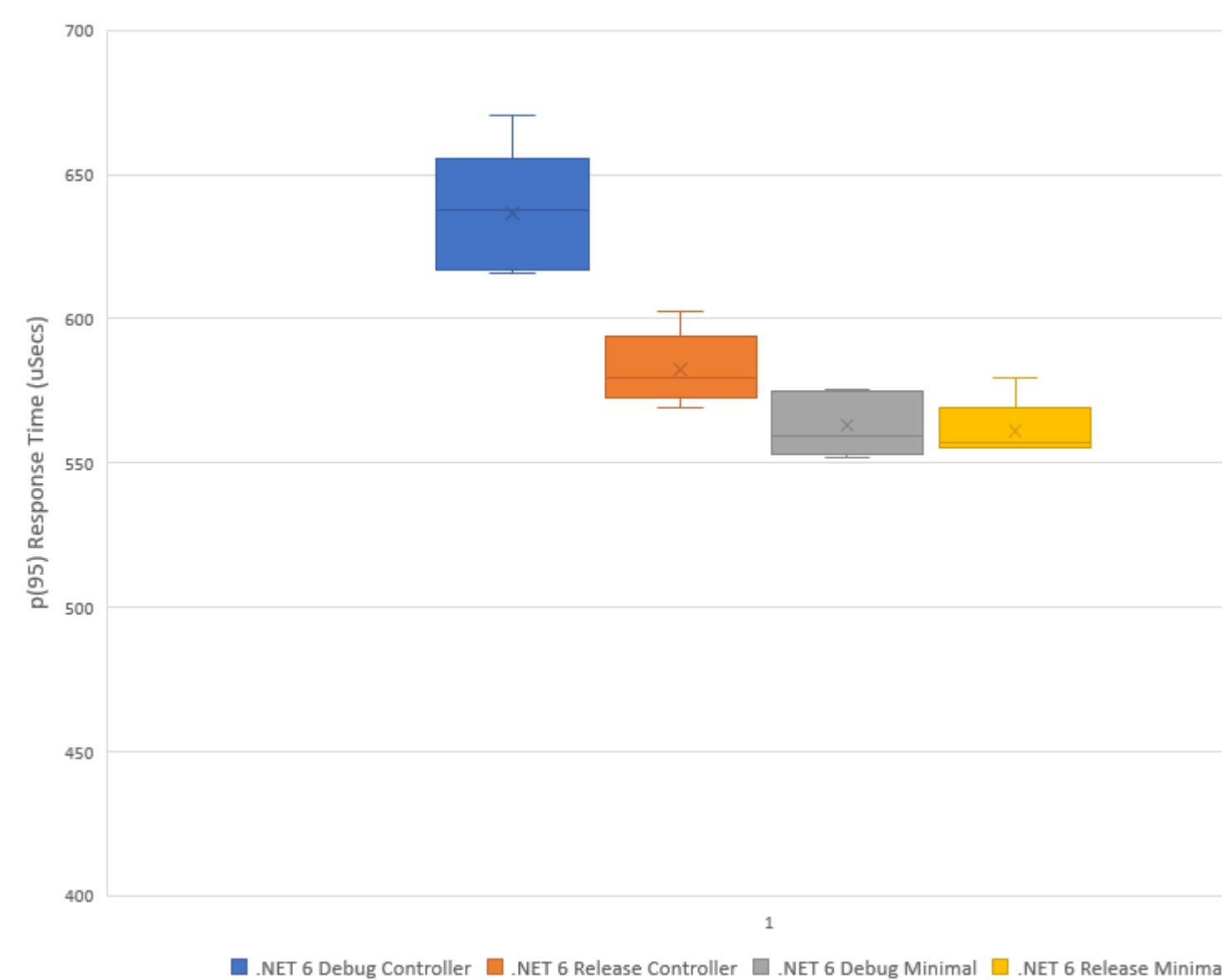


.NET 6 webAPI Benchmarks

p(95) Response Time (uSecs)

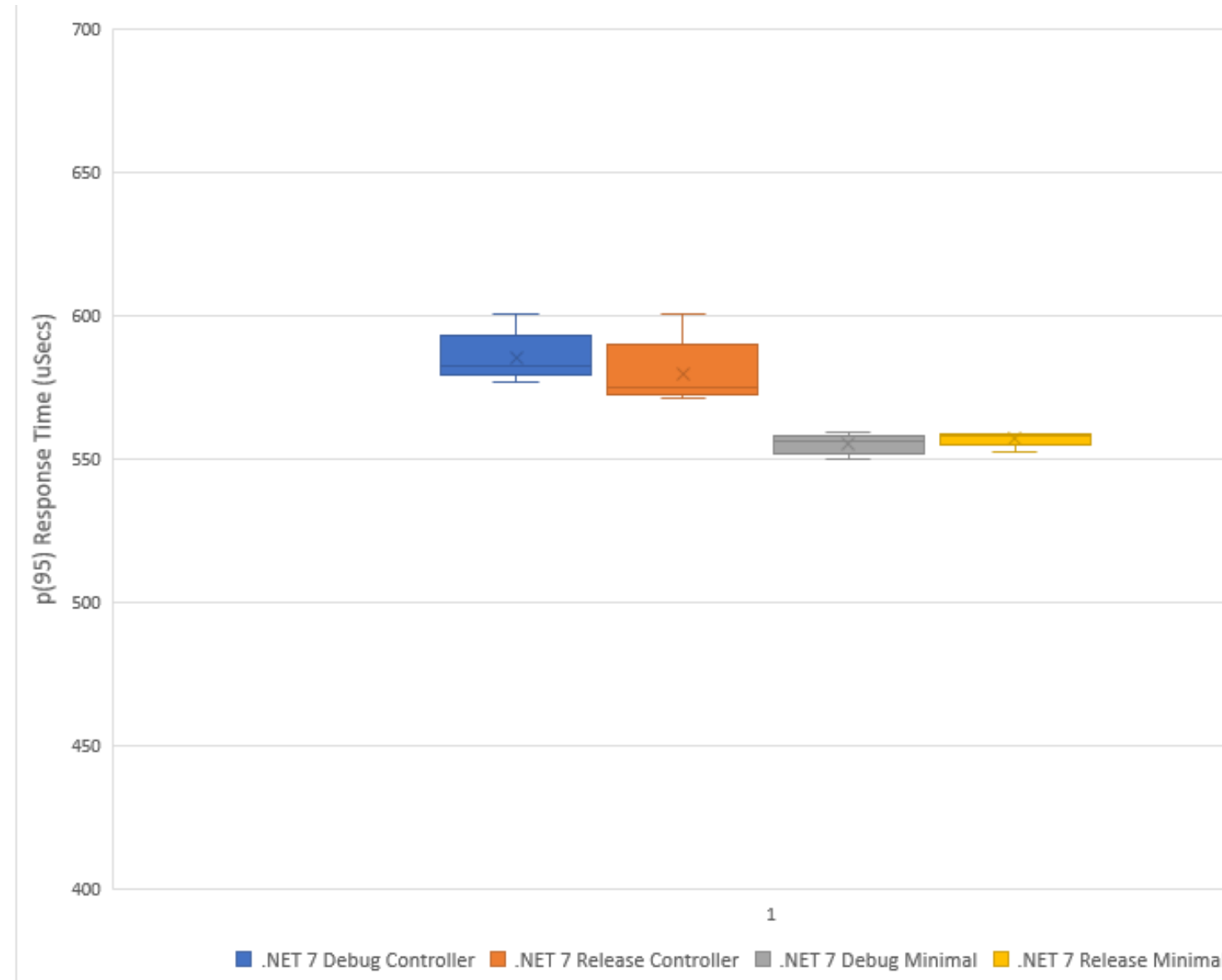
Comparing relative performance between

- .NET 6 vs .NET 7
- Debug vs Release Builds
- Controller style vs Minimal API webAPIs



.NET 7 webAPI Benchmarks

p(95) Response Time (uSecs)



Source Code Repo

<https://github.com/TomBruns/WebAPI.Performance>

k6 used for performance testing

<https://k6.io/docs/>

```
import http from 'k6/http';
import { check, sleep } from 'k6';

export const options = {
  stages: [
    { duration: '10s', target: 10 },
    { duration: '30s', target: 30 },
    { duration: '20s', target: 0 },
  ],
};

export default function () {
  const res = http.get('https://localhost:5001/WeatherForecast');
  check(res, { 'status was 200': (r) => r.status === 200 });
}
```

Testing Notes

- Simple Weather style webAPI
- All tests executed running webAPI from command line
- Tests for each configuration were executed 5 times
- Care was taken to hold local workstation conditions constant
- Each test iteration executed >2M calls

ANALYSIS – Response Time

- For the same impl style (Controller vs Minimal API there is a minimal benefit of upgrading from .NET to .NET 7
- Minimal API style is 2% to 4% Faster then Controller Style APIs

Bottom Line:

Consider upgrading from .NET 6 to .NET 7 for an easy 5% thrupt bump (do not expect much of a response time bump)

Be aware that Microsoft is putting a lot of attention into Minimal API style webAPIs and they 3% faster then Controller style webAPI and have 6% more thrupt

Testing Observations

- .NET 7: the large difference in performance between debug and release mode for Controller Style webAPI has **been eliminated** as compared to .NET 6
- .NET 7 minimal APIs performance is **better** then .NET 6 minimal APIs
- Minimal APIs **are faster** then Controller style APIs
- .NET7: the amount of the variation appears to be less the for .NET 6
- .NET 7 thrupt is better than .NET 6

ANALYSIS – Thrupt

- For the same impl style (Controller vs Minimal API there is a 4% to 6.8% thrupt (Req/Sec) increase upgrading from .NET 6 to .NET 7
- Minimal API style has 4.7% to 7.5% more thrupt then Controller Style APIs

Requests / Sec

