

Performance Scorecard

Engine Software version: 16.3.0.108
Tested: August 2nd, 2019

Summary

“How fast is the Windward Engine? Does it really produce pages per second?”

Yes, it does run that fast.

We know this because our customers and others regularly ask us to substantiate our claims regarding the speed of our solution. We test the performance metrics whenever we have a major change to the software. This ensures that we’re always improving our reporting and document generation engine and provides us with the opportunity to share the up-to-date performance information.

Test Parameters

For this latest version of the Windward Engine, we tested the performance by creating a report 50 times and averaging the result. Performance results (number of pages created per second [PPS]) depended on which engine is used, what sort of data source is used, and the number of simultaneous threads called by the Windward application.

- **Processor:** Intel® Xeon® E5520 @ 2.27GHz 8 virtual processors
- **Memory:** 32.0 GB
- **Operating system:** Windows Server 2016 Standard 64-bit
- The Windward Designer template is a Microsoft® Word document two pages long. It contains text, images, headers, footers, multiple loops, and equations.
- The generated report is a 17-page Word document (DOCX). The number of pages generated per second is not affected by the output format. Both DOCX and PDF reports were generated in the same amount of time. The report is run 50 times for each test.
- The XML file is a 1.35M file that contains a dump of the SQL Server Northwind database. The file is on the local machine.
- The SQL Server contains the Northwind SQL database. The database server is located on the test machine.

Testing Notes

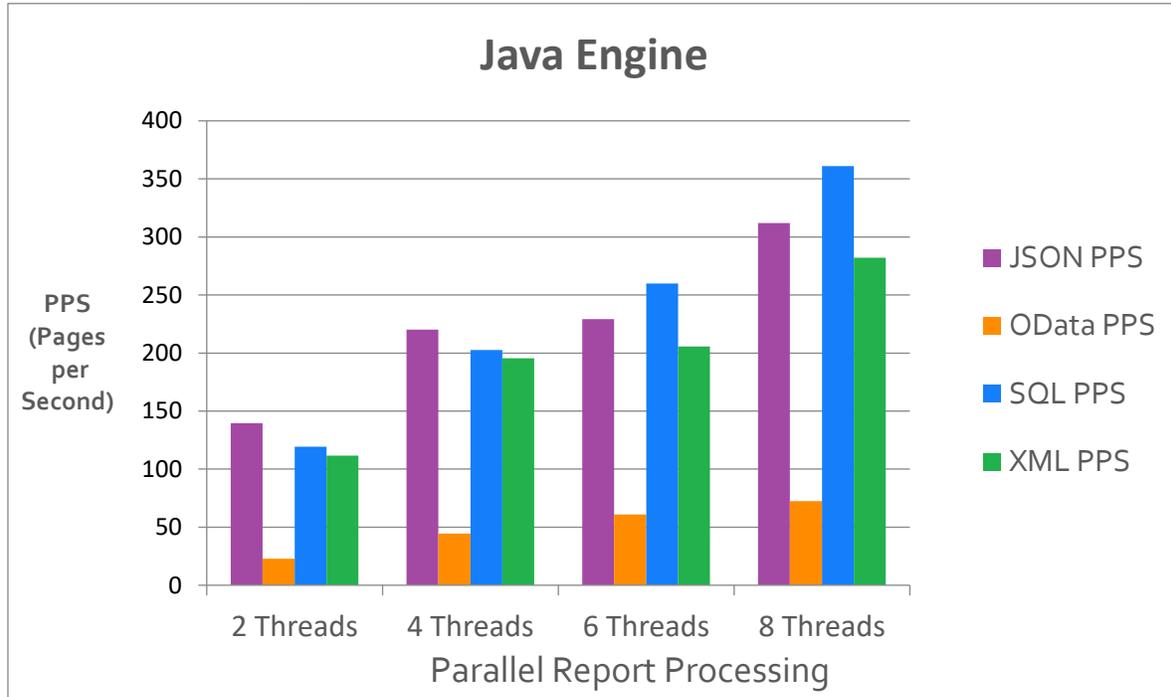
These Engine performance tests *assume the worst case performance in several aspects*, so your performance could easily be faster. In this test:

- We open the template each time the Engine generates a report. When you run the same template in bulk through the Windward Engine, it scans the template one time and caches it. This results in a speed increase as the time to read the template is removed from each successive run.
- The data sources are loaded again each time, which may not be necessary in your use case.
- Both DOCX and PDF reports were generated in the same amount of time.

The Windward Java Engine

For each test of the Java Engine, we ran with four data sources (**JSON**, **OData**, **SQL**, and **XML**) and four different thread counts (2, 4, 6 and 8 threads). The exact results are listed in the table below.

*Running on an Intel® Xeon® E5520 @ 2.27GHz with 32 GB RAM on Windows Server 2016 Standard (64-bit)

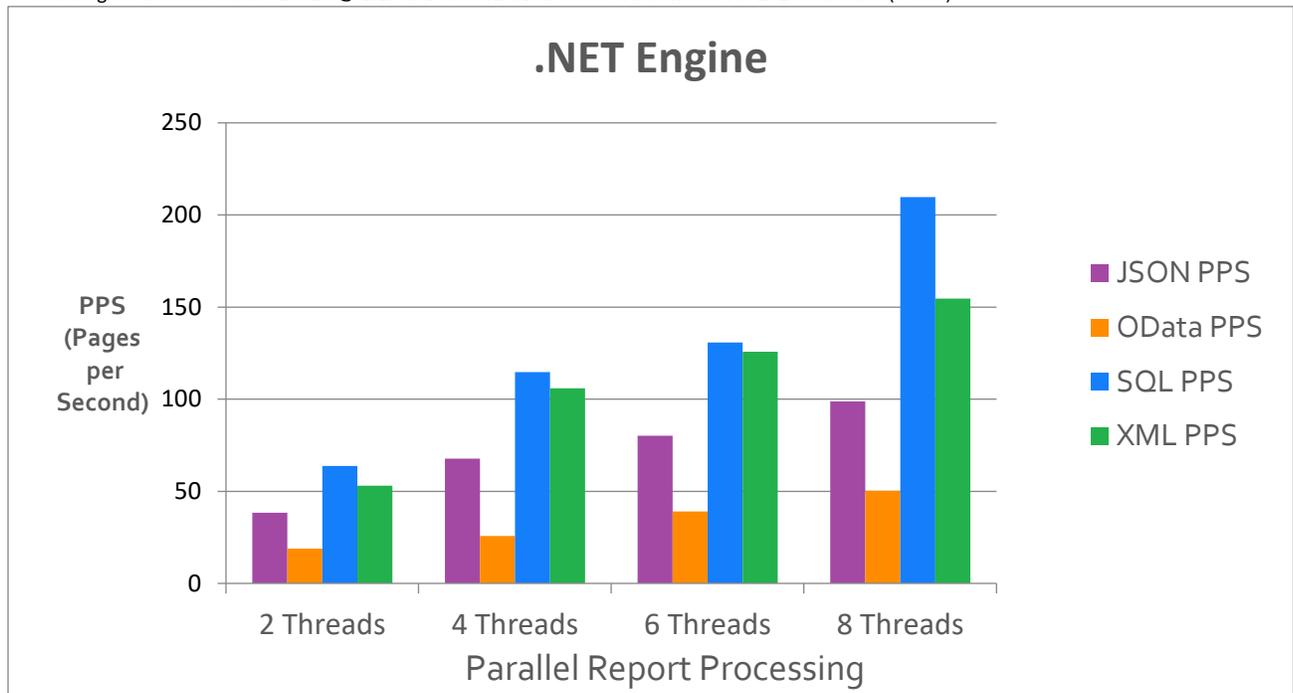


Number of Threads	Data Source Type	Pages per Second
2	JSON	139.72
2	OData	22.80
2	SQL	119.38
2	XML	111.75
4	JSON	220.05
4	OData	44.48
4	SQL	202.72
4	XML	195.38
6	JSON	229.32
6	OData	61.03
6	SQL	259.82
6	XML	205.56
8	JSON	312.06
8	OData	72.47
8	SQL	360.96
8	XML	282.17

The Windward .NET Engine

For each test of the .NET Engine, we ran with four data sources (**JSON**, **OData**, **SQL**, and **XML**) and four different thread counts (2, 4, 6 and 8 threads). The exact results are listed in the table below.

*Running on an Intel® Xeon® E5520 @ 2.27GHz with 32 GB RAM on Windows Server 2016 Standard (64-bit)



Number of Threads	Data Source Type	Pages per Second
2	JSON	38.39
2	OData	18.92
2	SQL	63.73
2	XML	53.04
4	JSON	67.73
4	OData	25.81
4	SQL	114.67
4	XML	105.81
6	JSON	80.22
6	OData	39.05
6	SQL	130.76
6	XML	125.70
8	JSON	98.89
8	OData	50.22
8	SQL	209.70
8	XML	154.53



Want to run this performance test yourself?

The most accurate results will come from running the Windward performance tests on your own target system. That is why we have embedded this testing code inside the Windward Engine.

You can find out more on how to run this [Performance Analysis Test on the Windward Documentation Wiki](#).

Need a trial version of the Engine?

If you do not have a version of the Windward .NET or Java Engine, you can [download a free trial from the Windward Web site](#).

You can also [request a live, personalized demo](#) with one of our friendly, experienced Windward sales engineers. Whether you want a simple, high-level overview or a deeper, more technical, and feature-rich discussion, our team can help answer your questions and satisfy your curiosity.