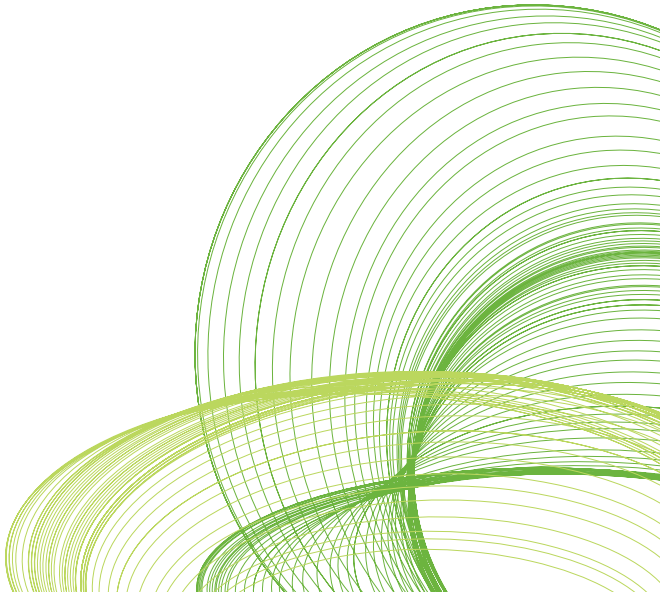
QlikView

QLIKTECH SCALABILITY CENTER TECHNICAL NOTE

Tested Servers for QlikView

A QlikView Technical Note



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One of the most common questions that the Scalability Center at QlikTech gets asked is "What machine(s) should I buy?" This is a difficult question to answer because it depends not just on how much data and how many users you have, but also on how you design the QlikView applications and the other multiple variables in your data processing environment. While we cannot recommend or endorse any particular server solution we can provide certain information that may help make your choice of hardware simpler. In this document, the Scalability Center is publishing a "whitelist" of hardware that has been tested with the QlikView Hardware Benchmarking Package and achieved results indicating that they have performed well in a typical QlikView environment. While this whitelist can be used as a preliminary guide for QlikTech pre-sales and expert services personnel, actual server selection for any given customer should be made via a consultation with a trained QlikView professional and NOT on solely the basis of this document.

ABOUT THE BENCHMARKING PACKAGE

The QlikView Hardware Benchmarking Package contains a set of tests facilitating a "like to like" comparison amongst different hardware. We encourage customers and partners to download it and use it to test their servers. If you send the results of the testing to the Scalability Center we will review your results and if appropriate, add your tested configuration to our list of tested servers. Read more at http://community.qlikview.com/docs/DOC-2942.

The QlikView Hardware Benchmarking Package consists of two parts and six types of tests focusing on different areas on server performance. The table below lists a brief description of type of tests and focus areas used by this package.

Test client	Test description	Test focus area
Desktop Client	Scenario: A macro triggering a demanding calculation Application: 1 B records	CPU processing capacity
Ajax client (simulated by JMeter)	Scenario: 50 concurrent users without think time in-between clicks triggers light calculations. Avoids selecting cached values. Application: 50 M records	Full architecture tested. Memory bus in combination with CPUs exercised.

Ajax client (simulated by JMeter)	Scenario: 50 concurrent users without think time in-between clicks triggers cached calculations. Selections are static and no randomization on simulated selections. Application: 50 M records	Benchmarks capacity for fetching and delivering cached results.
Ajax client (simulated by JMeter)	Scenario: 1 concurrent user with 5 seconds think time in-between clicks triggers light calculations. Avoids selecting cached values. Application: 50 M records	Reference benchmark focusing memory bus in combination with CPUs exercised when architecture is not exercised to any extent
Ajax client (simulated by JMeter)	Scenario: 1 concurrent user with 5 seconds think time in-between clicks triggers cached calculations. Selections are static and no randomization on simulated selections. Application: 50 M records	Reference benchmark focusing cache look ups and delivering cached result sets when architecture is not exercised to any extent
Ajax client (simulated by JMeter)	Scenario: 10 concurrent users with 20 seconds think time in-between clicks triggers heavy calculations. Application: 50 M records.	Benchmark the CPU calculation capacity. This is the Ajax test that is closest to the stand-alone test (1 above)

CONSIDERATIONS

- **Processor.** Intel outperforms AMD in general for QlikView.
- **Processor.** For Intel chips, a faster clock frequency leads to faster performance.
- **Memory.** Higher amounts of RAM will allow for more cached result sets and typically better performance.
- **Memory.** Supported memory configurations for best performance should be confirmed with manufacturer.
- **Architecture.** Using the same well-performing Intel chips in two different server types can give different results. Current 8-socket solutions are not optimal.
- **Settings.** Server BIOS and Windows settings can have a significant impact on performance. If possible, follow recommendations such as turning off NUMA. See http://community.qlikview.com/docs/DOC-2362 for more information.

SERVER SELECTION CRITERIA

The Scalability Center carries out and collates benchmark tests that compare different hardware configurations, versions of QlikView as well as several different uses of QlikView, (see test descriptions above). From these results they can see which combinations perform well and which don't. "Performing well" in this context means that a server delivers good throughput and fast response times in relation to other servers of similar size within the tested environment. The list presents the best performing servers in a certain category based on retrieved benchmarking results.

HOW CAN THE SERVER RECOMMENDATIONS BE USED?

The "whitelist" of tested severs (see table below) should be seen as a list of servers that have performed well in our testing environment. However, this list does not answer the question whether one of the presented configurations is sufficient for a certain deployment. Which or how many of the presented servers needed for a certain deployment involves many dependencies (e.g. amount of users, usage pattern, application design and performance expectations) and cannot be answered by the general benchmarking test results. Only in combination with a consultation with a trained QlikView professional can a recommended selection be made for any given scenario. However, by choosing one of the presented servers below, there is a good likelihood that it is one of the better selections when looking for a server of a certain size.

BENCHMARKED WELL PERFORMING SERVERS*:

Number of CPU sockets	Servers	Processor	Comments:
2	HP ProLiant DL 380 G7	Intel Xeon X5680/ X5690 (6 cores/ socket)	
2	IBM x3650 / Dell PowerEdge R720	Intel Xeon E5-2670 (8 cores/ socket)	
2	HP Proliant DL380 Gen8	Intel Xeon E5-2690 (8 cores/socket)	
4	HP ProLiant DL 580 G7	Intel Xeon E7-4870 (10 cores/socket) Intel Xeon X7560 (8 cores/ socket)	
4	Dell PowerEdge R910	Intel Xeon E7-4870 (10 cores/socket)	
4	IBM x3850 X5	Intel Xeon X7560 (8 cores/ socket)	Use QV 11 only. See http://community.qlikview.com/docs/DOC-2362 for more information.

*May include results from third party testing that have not been independently verified.

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