

Qlik® Scalability Center Recommended Servers

Tested servers for QlikView® and Qlik® Sense

In this document, the Scalability Center is publishing a list of top performing processors, that have been tested on specific servers with a set of predefined relevant tests and achieved results indicating that they have performed well in a typical environment. While this list can be used as a preliminary guide for Qlik pre-sales and consulting services personnel, **actual server selection for any given customer should be made via a consultation with a trained Qlik professional and NOT solely based on this document.**

About the benchmarking tests

The benchmarking tests consist of a number of predefined applications and virtual user simulation scripts:

- QlikView: The Hardware Benchmarking Package, see community.qlik.com/docs/DOC-2942
- Qlik Sense: The Scalability Tools, see community.qlik.com/docs/DOC-8878

The tools are publicly available for anyone to use. We encourage customers and partners to download them and use them to test their servers. If you send the results from the testing to the Scalability Center, we will review your results and, if appropriate, add your tested configuration to our list of tested servers.

Server selection criteria

The Scalability Center carries out and collates benchmark tests that compare different hardware configurations, versions of the Qlik products as well as several different uses of the Qlik products. From these results one can see which combinations perform well and which do not. In this context, “perform well” 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 and results from in-house tests as well.

How can the server recommendations be used?

One of the most common questions that we receive at the Qlik Scalability Center is “What machine(s) should I buy?” This is a difficult question to answer because it depends on many variables in your data processing environment.

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While we cannot make a specific recommendation or endorsement for a particular server solution, we can provide certain information that may help make your choice of hardware simpler. In the table below is a list of servers tested 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 are needed for a certain deployment involves many dependencies (for example, number of users, usage pattern, application design and performance expectations) and cannot be answered by the general benchmarking test results. Only by consulting with a trained Qlik professional can a recommended selection be made for any given scenario. However, choosing one of the recommended servers below is a good starting point in determining which server will best meet your needs.

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Top performing benchmarked chipsets:

Processor	CPU sockets	Validated on
Intel Xeon E5 v2 family: E5-2690 v2 E5-2697 v2	2	Cisco UCS C240 M3 (2 x E5-2690v2) HP Proliant DL380p G8 (2 x E5-2697v2) HP Proliant DL360p G8 (2 x E5-2690 v2) Huawei RH2288HV2 (2 x E5-2690 v2)
Intel Xeon E5 v3 family: E5-2690 v3 E5-2697 v3 E5-2699 v3 E5-2687W v3	2	Huawei RH2288HV3 (2 x E5-2690 v3) HP Proliant DL380 Gen9 (2 x E5-2697 v3) Dell PowerEdge R630 (2 x E5-2699 v3) Dell PowerEdge R630 (2 x E5-2687W v3)
Intel Xeon E5 v4 family: E5-2640 v4 E5-2687W v4 E5-2697A v4 E5-2699 v4	2	Dell PowerEdge R430 (2 x E5-2640 v4) Dell PowerEdge R630 (2 x E5-2687W v4) Dell PowerEdge R630 (2 x E5-2697A v4) Dell PowerEdge R630 (2 x E5-2699 v4)
Intel Xeon E7 v2 family: E7-4890 v2	4	HP Proliant DL 580 G8 (4 x E7-4890 v2) Huawei RH5885HV3 (4 x E7-4890 v2)
Intel Xeon E7 v3 family: E7-8880 v3 E7-8891 v3	4	Dell PowerEdge R930 (4 x E7-8880v3) Dell PowerEdge R930 (4 x E7-8891v3)
Intel Xeon E7 v4 family: E7-8867 v4 E7-8890 v4 E7-8891 v4	4	Dell PowerEdge R930 (4 x E7-8867v4) Dell PowerEdge R930 (4 x E7-8890v4) Dell PowerEdge R930 (4 x E7-8891v4)

Last updated December 20th 2016. This document is for informational purposes only and should not be considered as a recommendation or endorsement of any particular systems, or otherwise solely relied upon for the selection of any chipsets for use with QlikView® or Qlik® Sense software.

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Considerations when selecting hardware

Processors

In general, from all the chipsets tested, we have found the best performance with Intel chipsets for Qlik products. For Intel chips, a faster clock frequency leads to better performance as the Qlik Indexing Engine needs a similar amount of clock cycles to complete any of its calculations for any processor within a certain Intel family. A server solution with 4 CPUs (for example, the E7 – family processors) typically has more total processing capacity than a server solution with 2 CPUs (for example, the E5 – family processors). However, the highest available clock frequency for processors in a 2 CPUs server solution is typically higher than for processors in a 4 CPUs server solution. In practice this means that during lower loads (spikes of CPU utilization) a 2 CPUs server solution often outperforms or at least performs as well as a 4 CPUs server solution. But at the point when the 2 CPUs server solution gets saturated, the 4-socket solution will start to outperform the 2 CPUs solution.

Memory

Higher amounts of RAM will allow for more cached result sets and typically better performance. Supported memory configurations for best performance should be confirmed with the manufacturer. The manufacturer should have guidelines for which configurations of RAM can be deployed whilst keeping the bus speed as high as possible. The Qlik Indexing Engine allocates memory uniformly over all available RAM, meaning that it is important to always have the amount of memory per CPU socket evenly distributed.

Architecture

As the Qlik products are good at utilizing memory as well as processing capacity from all CPUs, it is important that the chipset architecture allows for fast communication between the CPU sockets. Therefore, chipset architectures that allow for direct connections between all available CPU sockets via QPI links are preferred for best performance. For example, neither current 8-socket solutions nor the E5-4600 series from Intel are optimal due to lack of direct connections between all available CPUs.

Settings

Server BIOS and Windows settings can have a significant impact on the performance. See community.qlik.com/docs/DOC-2362 for more information on recommended settings.