Qlik® Scalability Center technical note

Tested servers for QlikView® and Qlik® Sense

One of the most common questions that the Scalability Center at Qlik 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 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 a set of predefined relevant tests and achieved results indicating that they have performed well in a typical environment. While this whitelist 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 on the basis of this document.

About the benchmarking tests

The benchmarking tests consist of a number of predefined applications and virtual user simulation scripts. The QlikView specific test suite is referred to as the QlikView Hardware Benchmarking Package which is public for anyone to use. 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 community.qlik.com/docs/DOC-2942.

Server selection criteria

The Scalability Center carries out and collates benchmark tests that compare different hardware configurations, version of Qlik product as well as several different uses of Qlik product. 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 and results from in house tests as well.

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 Qlik 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 chipsets*:

Chipset	CPU sockets	Validated on
Intel Xeon E5-2670, E5-2680, E5-2690	2	IBM x3650 (E5-2670) Dell R720 (E5-2670) HP Proliant DL380p G8 (E5-2690)
Intel Xeon E5-2690 v2, E5-2697 v2	2	Cisco UCS C240 M3 (E5-2690v2) HP Proliant DL380p G8 (E5-2697v2) HP Proliant DL360p G8 (E5-2690 v2) Huawei RH2288HV2 (E5-2690 v2)
Intel Xeon E5-2690 v3, E5-2697 v3, E5-2699 v3, E5-2687W v3	2	Huawei RH2288HV3 (E5-2690 v3) HP Proliant DL380 Gen9 (E5-2697 v3) Dell PowerEdge R630 (E5-2699 v3) Dell PowerEdge R630 (E5-2687W v3)
Intel Xeon E7-4870	4	HP Proliant DL 580 G7 (E7-4870) Dell R910 (E7-4870)
Intel Xeon E7-4890 v2	4	HP Proliant DL 580 G8 (E7-4890 v2) Huawei RH5885HV3 (E7-4890 v2)

*May include results from third party testing that have not been independently verified. Validated on shows servers that have been tested and confirm the chipset performance.

Last updated June 30th 2015. This document is for informational purposes only and should not be considered as a recommendation or endorsement of any particular systems, or otherwise relied upon for the selection of any platforms for use with QlikView® or Qlik® Sense software.

Considerations when selecting hardware

Processors

Intel outperforms AMD in general for Qlik Products. For Intel chips, a faster clock frequency leads to better performance as Qlik Associative Indexing Engine need 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 (e.g. E7 – family processors) typically have more total processing capacity than a server solution with 2 CPUs (e.g. 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 perform as well as a 4 CPUs server solution. But at the point when the 2 CPUs server solution get saturated whilst the 4 socket solution still isn't due to higher total capacity, the latter will 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 manufacturer. The manufacturer should have guidelines for which configurations of RAM that can be deployed whilst keeping the bus speed as high as possible. Qlik Associative 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 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 in-between CPU sockets. Therefore chipset architectures that allow for direct connections in-between all available CPU sockets via QPI links is preferred for best performance. Neither current 8-socket solutions nor the E5-4600 series from Intel are optimal, due to lack of direct connections in-between all available CPUs.

Settings

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