ZOLL On-Premise Server Specifications

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Overview

This guide provides information on server specifications for an On-Premise version of CaseReview. While it is possible to install CaseReview components on *separate* servers, this guide assumes installation of those components will take place on *one* virtual machine or physical server, processing a maximum of 10 cases per hour. **If you anticipate more than 10 cases per hour (or over 200 cases per day) being uploaded into CaseReview, please reach out to a Sales Engineer for a deeper review of the anticipated workload to better customize the CaseReview environment.** Larger systems will require load balancing across additional servers for proper application operation and performance.

DefibDashboard™
This document can be used as a baseline for installing multiple ZOLL products, such as running DefibDashboard™ and CaseReview on the same servers. However, for large environments, ZOLL Defibrillator Dashboard™ and CaseReview should have their own server installations to attain the best performance.

For more details on virtual machine requirements, please contact a ZOLL Sales Engineer.

Hardware & Software Requirements

CPU Speed Requirements

ZOLL strongly recommends server systems with CPU speeds of 3.6 GHz or greater for the best possible end user experience due to the nature of the workloads being processed. Case file processing is a computationally expensive single threaded process that is not well suited to slower clock speed/higher core count systems as the operation cannot be performed in parallel over multiple cores. Selecting systems with clock speeds less than 3.6 GHz has the potential to impact end user system response times, increase case file processing times (time to case availability in CaseReview), and reduce the stated case file processing capacity of the server per hour. ZOLL will not be able to address support requests related to degraded system performance in the event slower CPUs are employed; the primary remedy is to increase the CPU clock speeds to the recommended levels. ZOLL does not support systems with clock speeds below 2.2 GHz.

Single Machine Configuration

Description: This configuration runs all components and third-party software on a single machine. This is recommended for smaller customers that have little to no burst traffic (file uploads) into the system.

Estimated Throughput: 1 - 8 cases concurrently processing at once.

Component	Requirement
Processor	Dual Processor with 4 core @ 3.6GHz (not exclusive)
Memory	Minimum 16GB - ZOLL recommends 24GB+
Storage (OS Disk)	Software and website installation requires 8GB above operating systems installs and SQL Server installations. Disk I/O averages at peak traffic Read: ~1500kb Write: ~1400kb
Storage Disk	10GB minimum storage ***Note** – if running ZOLL Defibrillator Dashboard™ in conjunction with CaseReview OnPremise, minimum storage requirement is **100GB** plus the formula below **SQL Server Requirements** Use the following to understand approximate storage requirements: d = cases per day s = average case size c = file compression rate | Device	Compression Rate
R-Series	.6
X-Services	.88
AED3	.9 | $(d * (s*c)) * 365 * 7$ = total storage cost for given device.
Apache Cassandra Requirements	Note Cassandra is used as short term storage and data has a TTL (time to live) of 3 years. TTL is configurable to the second. $(d (s*.8)) * 1095$ = total storage cost.
Network	1Gpbs
Install Account	An admin account able to read, write, and modify files on the server

Operating System	Windows Server 2016 - 2019 (not core) with a base OS language of US English
SQL Server	SQL Server 2012 – 2019 Standard or Enterprise (not express)
Other Requirements	Windows Management Framework 5.0 (or higher) .NET Framework 4.7.2 or greater

Standard Configuration

Description: This configuration runs all ZOLL Components on an application server and a MSSQL server, each on a separate machine. This is recommended for small to medium sized customers that have some burst traffic (file uploads) into the system.

Estimated Throughput: 8-15 cases concurrently processing at once.

Application Server

Component	Requirement
Processor	Dual Processor with 4 core @ 3.6GHz (not exclusive)
Memory	Minimum 16GB - ZOLL recommends 24GB+
Storage (OS Disk)	Software and website installation requires 8GB above operating systems installs and SQL Server installations. Disk I/O averages at peak traffic Read: ~1500kb Write: ~1400kb
Storage Disk	10GB minimum storage ***Note** – if running ZOLL Defibrillator Dashboard™ in conjunction with CaseReview OnPremise, minimum storage requirement is **100GB** plus the formula below **SQL Server Requirements** Use the following to understand approximate storage requirements: d = cases per day s = average case size

	c = file compression rate	
	Device	Compression Rate
	R-Series	.6
	X-Services	.88
	AED3	.9
	(d * (s*c)) * 365 * 7 = total storage cost for given device.	
Apache Cassandra Requirements	Note Cassandra is used as short term storage and data has a TTL (time to live) of 3 years. TTL is configurable to the second. (d (s*.8)) * 1095 = total storage cost.	
Network	1Gpbs	
Install Account	An admin account able to read, write, and modify files on the server	
Operating System	Windows Server 2016 - 2019 (not core) with a base OS language of US English	
Other Requirements	Windows Management Framework 5.0 (or higher) .NET Framework 4.7.2 or greater	

Database Server

Please follow Microsoft's sizing guide and recommendations for SQL server.

ZOLL SQL Server Requirements

Use the following to understand approximate storage requirements:

d = cases per day

s = average case size

c = file compression rate

Device	Compression Rate
R-Series	.6
X-Services	.88
AED3	.9

(d * (s*c)) * 365 * 7 = total storage cost for given device.

SQL Server 2012 – 2019 Standard or Enterprise (not express)

Scaled Configuration

Description: This configuration runs all ZOLL Components on an application server, a case file processing server, and MSSQL server on a separate machine. This is recommended for large customers that are typically hospital systems with multiple sites.

Estimated Throughput: 15+ cases concurrently processing at once.

Application Server

Component	Requirement
Processor	Dual Processor with 4 core @ 3.6GHz (not exclusive)
Memory	Recommended 16GB
Storage (OS Disk)	Software and website installation requires 8GB above operating systems installs and SQL Server installations. Disk I/O averages at peak traffic Read: ~1500kb Write: ~1400kb
Storage Disk	10GB minimum storage *__Note__ – if running ZOLL Defibrillator Dashboard^{TM} in conjunction with CaseReview OnPremise, minimum storage requirement is **100GB** plus the formula below
Network	1Gpbs
Install Account	An admin account able to read, write, and modify files on the server
Operating System	Windows Server 2016 - 2019 (not core) with a base OS language of US English

SQL Server	SQL Server 2012 – 2019 Standard or Enterprise (not express)
Other Requirements	Windows Management Framework 5.0 (or higher)
	.NET Framework 4.7.2 or greater

Database Server

Please follow Microsoft's sizing guide and recommendations for SQL server.

ZOLL SQL Server Requirements

Use the following to understand approximate storage requirements:

d = cases per day

s = average case size

c = file compression rate

Device	Compression Rate
R-Series	.6
X-Services	.88
AED3	.9

(d * (s*c)) * 365 * 7 = total storage cost for given device.

SQL Server 2012 – 2019 Standard or Enterprise (not express)

Processing Server

Component	Requirement
Processor	Dual Processor with 4 core @ 3.6GHz (not exclusive)
Memory	Minimum 16GB - ZOLL recommends 24GB+
Storage (OS Disk)	Software and website installation requires 8GB above operating systems installs and SQL Server installations.
	Disk I/O averages at peak traffic
	Read: ~1500kb
	Write: ~1400kb

Storage Disk	200GB minimum storage
Network	1Gpbs
Install Account	An admin account able to read, write, and modify files on the server
Apache Cassandra Requirements	Note Cassandra is used as short term storage and data has a TTL (time to live) of 3 years. TTL is configurable to the second. (d (s*.8)) * 1095 = total storage cost. **Please note that total storage cost is per Cassandra node.
Operating System	Windows Server 2016 - 2019 (not core) with a base OS language of US English
Other Requirements	Windows Management Framework 5.0 (or higher) .NET Framework 4.7.2 or greater

Load Balancer Server

Please follow your load balancers sizing guide.

Massive Configurations

ZOLL supports even larger scaled configurations should one of the above scenarios not accommodate your user base. Please contact your ZOLL Sales Engineer with your estimated defib case file traffic and user base size to create plan for larger, customized solutions.

Client Configurations

Supported browsers: Google Chrome for desktop

Browser requirements: Enable Javascript and custom fonts

Unsupported Configurations

CaseReview does not support the following configurations.

Windows

- FIPS-compliant settings.

Sql Server

- TLS connection enablement.
- Windows authentication accounts for application connectivity.