

System requirements

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Before installing Magic Collaboration Studio, make sure that the system requirements described in this chapter are met.

Cassandra installation

Magic Collaboration Studio requires Cassandra installation. To learn more about the hardware requirements for Cassandra, see <https://cassandra.apache.org/doc/latest/cassandra/operating/hardware.html>

Recommended system requirements

System requirements are dictated by the intended deployment, taking into account the overall load which the environment will experience including:

- Number of concurrent users
- Level of activity (commits) per day
- Overall number and size of the projects stored in Magic Collaboration Studio.

The database (Cassandra) can be located on the same server as Magic Collaboration Studio or on a separate server. Storage requirements apply only to the node where the database is located. Magic Collaboration Studio hosting nodes can be virtualized without any issues if the host is not oversubscribed on its resources.

Nodes containing both Magic Collaboration Studio and Cassandra

- 96 -128 GB ECC RAM
- >=16 processor threads (such as E5-1660)
- >1TB SSD DAS storage

Nodes containing only Cassandra

- 48 - 64 GB ECC RAM
- >=8 processor threads (such as E5-1620)
- >1TB SSD DAS storage

Nodes containing only Magic Collaboration Studio

- 48 - 64 GB ECC RAM
- >=8 processor threads (such as E5-1620)
- >250GB storage

Multi-Node Clusters

Recommended minimum sizing stated above applies to each node in a multi-node cluster

SAN Storage

SAN Storage should not be used on Cassandra nodes for data or commit log volumes. This will result in severe performance degradation. There is no amount of SAN tuning and OS tuning which could mitigate this.

Minimal hardware requirements

For adequate Magic Collaboration Studio operation, your hardware should meet the following requirements:

- 8 Processor Cores - i.e. Quad-Core Hyper-threaded CPU (such as Intel E3-1230 or faster).
- 32 GB RAM (Motherboard with an ECC RAM is recommended) and 8 GB RAM dedicated for TeamworkCloud
- At least 3 separate disks, preferably SSD (NVMe), (OS/Application, Data, and Commit logs). Depending on company backup procedures and infrastructure, an additional disk, equal to the data disk in size, may be required for storing the backup snapshots.

Software requirements

Magic Collaboration Studio supports the following operating systems:

- Linux 64-bit CentOS/RedHat 7, RedHat 8
- Windows 2012 R2, Windows 2016, or Windows 2019.

Operating Systems

We recommend using the Linux operating system. For more information, please visit <https://www.datastax.com/dev/blog/cassandra-and-windows-past-present-and-future>.

For a full working environment, you will also need:

- OpenJDK 1.8.0_202 or later or Oracle Java (for Cassandra 3.11.x). Java 1.8 updated later than 251 cannot be used with Cassandra on the Windows platform.
- OpenJDK 11.0.12 (for Magic Collaboration Studio).
- FlexNet License Server.
- Cassandra 3.11.x.
- A static IP address for each node.
- Open ports 1101, 2181, 2552, 7000, 7001, 7199, 9042, 9160, 9142 between servers in a cluster.
- Open ports 3579, 8111, 8443, 8555 and 10002 (default) to clients. Port number 10002 can be changed according to the port assigned to secure connections between the client software and Magic Collaboration Studio.

The following table lists the ports that Magic Collaboration Studio services use and their descriptions:

Service	Port	Description
FlexNet server (lmadmin)	1101	FLEXnet server port
	8090	Default vendor daemon port (web browser management port)
	27000-27009	Internal license server manager port
Cassandra	7000	Internode communication port (not used if TLS is enabled)
	7001	TLS Internode communication port (used if TLS is enabled)
	7199	Cassandra JMX port
	9042	Native client port (used with 2021x version and later)
	9142	Native client port when SSL is enabled (then Cassandra is on a separate server or for multinode deployment)
	9160	Thrift client API port (used until 2021x version, still required for migrations from 19.0 version)
Teamwork Cloud	2552	Teamwork Cloud default remote server port
	3579	Default Teamwork Cloud port when SSL is not enabled
	8111	Teamwork Cloud REST API port
	10002	Default port when SSL is enabled
Web Application Platform	8443	Web Application Platform port (TWCloud Admin, Collaborator...)
Authserver	8555	Authentication server port
Zookeeper	2181	Zookeeper internal port

For additional server capacity and performance recommendations, see <https://cassandra.apache.org/doc/latest/cassandra/operating/hardware.html>

If deploying on Amazon EC2

In the case of deploying on Amazon EC2, we recommend using the m5-2xlarge, r5-2xlarge, or i3-2xlarge instances. Depending on the workloads, you may want to go to the -4xlarge instances, but for the vast majority of users, the -2xlarge will suffice. The m5 instances meet the minimum system requirements and will be acceptable for small deployments. The r5 instances provide more memory for the same CPU density. The i3 instances should be used when workloads have a higher level of user concurrency due to the significantly improved performance of the ephemeral NVMe storage.