



F2

F2 Hardware Requirements

Version 8

Updated: 26.10.2020

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Introduction

This document describes the guidelines of a high performance F2 system.

In large-scale installations, the requirements can diverge due to existing environment/infrastructure.

If the use of F2 diverge from standard use, (many large searches, large number of documents etc.) or there are web services build on top of the F2 installation, the requirements can be higher than the ones specified below.

Talk to cBrain regarding the specific installation and demands to ensure the best possible performance.

PC

Component	Minimum requirement	Normal performance	Comments
CPU	Dual core @ 1,9 GHz	Core-I5 or higher	
Architecture	64 bit	64 bit	
RAM	4 GB (1 GB dedicated to F2)	8 GB (2 GB dedicated to F2)	
Disk	8 GB free space	SSD 20 GB free space	
NIC	100 Mbit/s	1 Gbit/s Wireless 54 Mbit	
Display	1280 x 1024	1920 x 1080 (HD)	On dual chip: set up F2 to run on integrated chip
Other requirements	Performance test needs to be done on a new installed PC	Performance test needs to be done on a new installed PC	For VDI environment we need a physical PC for baseline testing

Application server

We have an option to scale by adding more application-servers. This should only be done when they are overloaded with respect to CPU or I/O (Add enough memory in the servers will help - especially after version 6.1, where we can run in 64 bit mode).

Component	0-199 users	200-999 users	1000-1999 users	Comments
CPU	Quad core @ 2-3 GHz	Dual Quad core @ 2-3 GHz	Dual Quad core @ 2.5 - 3 GHz	
Architecture	64 bit	64 bit	64 bit	
RAM	8 GB	16 GB	32 GB	
NIC	1 Gbit/s	2X1 Gbit/s	2X1 Gbit/s	For 200+ users use one NIC for database connection and one for user communication. F2 should be prioritized on the network.
Disk Operations (Partitioning)	300 GB C: System 80 GB D: Application 100 GB E: Logs 20 GB F: cSearch Index 100 GB (Required if cSearch module chosen)	370 GB (400 IOPS) C: System 120 GB D: Application 100 GB E: Logs 50 GB F: cSearch Index 100 GB (Required if cSearch module chosen)	370 GB (400 IOPS) C: System 120 GB D: Application 100 GB E: Logs 50 GB F: cSearch Index 100 GB (Required if cSearch module chosen)	cSearch is an add on module, so the Disk space is only needed if cSearch is chosen. Depending on system use, cSearch can require a dedicated server on 999+ users systems.
Other requirements	If virtual: Dedicated resources	If virtual: Dedicated resources	If virtual: Dedicated resources	

Database server

Different parts of the database (data, document content, log, tempdb) should be placed on disks appropriate for the use (i.e. tempdb should be very fast for random access, document content should allow for fast sequential access etc.).

Depending on the hardware setup at the customer, cBrain will give best practice recommendations.

For up to 100 users, the database server can be virtual after a discussion with cBrain.

If you need an archive database or databases from other systems on the same server, it needs to be in a separate instance and have extra RAM.

The specifications are for a dedicated server for F2.

Component	0-199 users	200-999 users	1000-1999 users	Comments
Multiple databases on the same database instance as the F2 production database	No	No	No	No other databases (than the customers F2 Prod. database) should be present on same database instance. Otherwise, the resources are shared, and users can experience degraded performance.
CPU	Dual Quad core processors @ 2.5 GHz	Dual Quad core processors @ 2.5 GHz	Dual Penta core processors @ 3 GHz	
Architecture	64 bit	64 bit	64 bit	
RAM	96 GB (the more the better)	160 GB	280 GB SQL Server Enterprise Edition is required	
Disk Storage	Space for current files + space for future files.	Space for current files + space for future files.	Space for current files + space for future files.	Large demands for data storage can change the demands for the server specifications.

Component	0-199 users	200-999 users	1000-1999 users	Comments
NIC	1 Gbit/s	2x1 Gbit/s Use one NIC for application server connection and one for net/user communication.	2x1 Gbit/s Use one NIC for application server connection and one for net/user communication.	

Component	0-199 users	200-999 users	1000-1999 users	Comments
Disk Operations (Partitioning)	<p>680 GB</p> <p>C: System 80 GB</p> <p>D: SQL Bin (SQL installation) must be different from the drive where you have swap file.</p> <p>Data storage SAN minimum 1000 IOPS</p> <p>E: DB Data 300 GB</p> <p>F: Logs 100 GB "If simple recovery "</p> <p>G: Tempdb 100 GB (needs to be on fast disk - ask cBrain)</p> <p>H: Backup 100 GB</p>	<p>680 GB</p> <p>C: System 80 GB</p> <p>D: SQL Bin (SQL installation) must be different from the drive where you have swap file.</p> <p>Data storage SAN minimum 1000 IOPS</p> <p>E: DB Data 300 GB</p> <p>F: Logs 100 GB "If simple recovery "</p> <p>G: Tempdb separate disk system SSD 100 GB tempdb</p> <p>DB on separate disk system (internal via PCI) (minimum 100K IOPS)</p> <p>Tempdb in 8 file groups</p> <p>H: Backup is storage use + 100 GB</p>	<p>1150 GB</p> <p>C: System 120 GB</p> <p>D: SQL Bin (SQL installation) must be different from the drive where you have swap file.</p> <p>Data storage SAN minimum 1000 IOPS</p> <p>E: DB Data 300 GB</p> <p>F: Logs 400 GB "If simple recovery "</p> <p>G: Tempdb separate disk system SSD 130 GB tempdb</p> <p>DB on separate disk system (internal via PCI) (minimum 100K IOPS)</p> <p>Tempdb in 8 file groups</p> <p>H: Backup is storage use + 200 GB</p>	<p>Sizing of DB server in general, talk to cBrain.</p> <p>+2000 users need verification by cBrain CTO/operations manager.</p>
Other requirements		Minimum 10 Gbit/s connection to SAN	Minimum 10 Gbit/s connection to SAN	

Component	0-199 users	200-999 users	1000-1999 users	Comments
Other requirements		If virtual: Dedicated resources	If virtual: Dedicated resources	

Integration server

We have an option to scale by adding more integration-servers. This should only be done when they are overloaded with respect to CPU or I/O (Add enough memory in the servers will help - especially after version 6.1, where we can run in a 64 bit mode).

Component	0-199 users	200-999 users	1000-1999 users	Comments
CPU	Quad core @ 2-3 GHz	Dual Quad core @ 2-3 GHz	Dual Quad core @ 2.5 - 3 GHz	
Architecture	64 bit	64 bit	64 bit	
RAM	16 GB	32 GB	64 GB	
NIC	1 Gbit/s	2X1 Gbit/s	2X1 Gbit/s	
Disk Operations (Partitioning)	200 GB C: System 80 GB D: Application 100 GB E: Logs 20 GB	240 GB (400 IOPS) C: System 120 GB D: Application 100 GB E: Logs 20 GB	270 GB (400 IOPS) C: System 120 GB D: Application 100 GB E: Logs 50 GB	
Other requirements	If virtual: Dedicated resources	If virtual: Dedicated resources	If virtual: Dedicated resources	

Mobile server

Mobile server requirements can diverge due to different use scenarios I.E Self-service solutions, heavy use for third party integration services etc.

Component	0-199 users	200-999 users	1000-1999 users	Comments
CPU	Quad core @ 2-3 GHz	Quad core @ 2-3 GHz	Quad core @ 2-3 GHz	
Architecture	64 bit	64 bit	64 bit	
RAM	8 GB*	16 GB*	32 GB*	
NIC	NIC: 1 Gbit/s	NIC: 1 Gbit/s	NIC: 1 Gbit/s	
Disk Operations (Partitioning)	140 GB C: System 80 GB D: Application 40 GB E: Logs 20 GB	210 GB (400 IOPS) C: System 120 GB D: Application 40 GB E: Logs 50 GB	210 GB (400 IOPS) C: System 120 GB D: Application 40 GB E: Logs 50 GB	
Other requirements	If virtual: Dedicated resources	If virtual: Dedicated resources	If virtual: Dedicated resources	

* If the mobile server is used intensively as "REST-hub" for integrations add 4 GB more ram.