cBRAIN

F2

F2 Hardware
Requirements

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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 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	High performance	Recommendations
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 8 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	The delivery test needs to be done on a new installed PC		For VDI environment we need a physical PC for baseline testing

Application server

Component	0-199 users	200-999 users	1000-2000 users	Recommendations
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	
Disk	300 GB	300 GB (400 IOPS)	300 GB (400 IOPS)	
NIC	1 Gbit/s	2X1 Gbit/s	2X1 Gbit/s	For 200+ users use one NIC for database connection and one for user communication
Partitioning	C: System 80 GB D: Application 100 GB E: Logs 20 GB F: cSearch Index 100 GB (Required if cSearch module chosen)	C: System 80 GB D: Application 100 GB E: Logs 20 GB F: cSearch Index 100 GB (Required if cSearch module chosen)	C: System 80 GB D: Application 100 GB E: Logs 20 GB F: cSearch Index 100 GB (Required if cSearch module 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	1000-2000 users	Recommendations
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	From SQL 2014 you need Enterprise Edition to support more than 128 GB for data-cache.
Storage	680 GB + space for current files + space for future files.	680 GB + space for current files + space for future files.	680 GB + space for current files + space for future files.	Large demands for data storage can change the demands for the server specifications.
NIC	NIC: 1 Gbit/s	2x1 Gbit/s	2x1 Gbit/s	

Component	0-199 users	200-999 users	1000-2000 users	Recommendations
Partitioning	C: System 80 GB D: SQL Bin (SQL installation) must be different from the drive where you have swap file. Data storage SAN minimum 1000 IOPS E: DB Data 300 GB F: Logs 100 GB "If simple recovery " G: Temp DB 100GB (needs to be on fast disk - *ask cBrain*) H: Backup 100 GB	Same as 0-199 Plus SSD for temp DB on separate disk system (internal via PCI) (minimum 100K IOPS) Temp DB in 8 file groups	Same as 0-199 Plus SSD for temp DB on separate disk system (internal via PCI) (minimum 250K IOPS) Temp DB in 8 file groups	Sizing of DB server in general, talk to cBrain. +2000 users need verification by cBrain CTO/operations manager.
Other requirements		Minimum 10 Gbit/s connection to SAN	Minimum 10 Gbit/s connection to SAN	

Integration server

Component	0-199 users	200-999 users	1000-2000 users	Recommendations
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	24 GB	32 GB	
Disk	200 GB	200 GB (400 IOPS)	200 GB (400 IOPS)	
NIC	1 Gbit/s	2X1 Gbit/s	2X1 Gbit/s	
Partitioning	C: System 80 GB D: Application 100 GB E: Logs 20 GB	C: System 80 GB D: Application 100 GB E: Logs 20 GB	C: System 80 GB D: Application 100 GB E: Logs 20 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	1000-2000 users	Recommendations
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*	8 GB*	8 GB*	
Disk	140 GB	140 GB	140 GB	
NIC	NIC: 1 Gbit/s	NIC: 1 Gbit/s	NIC: 1 Gbit/s	
Partitioning	C: System 80 GB D: Application 40 GB E: Logs 20 GB	C: System 80 GB D: Application 40 GB E: Logs 20 GB	C: System 80 GB D: Application 40 GB E: Logs 20 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.