

BI4Dynamics BC Installation Requirements

Last update: October 2020

BI4Dynamics BC: 8.0.2

Document version: 1.2

SYSTEM REQUIREMENTS

It is of utmost importance that all system software used in BI project is of latest version and constantly updated. Any neglect of this task might result in inability of BI4Dynamics to be installed or properly operate.

For any questions related to system requirements, please send an email to support@bi4dynamics.com

1. Accounts and Permissions

- Be (local) administrator on the windows server where BI4Dynamics is installed.
- Read permissions on the BC database.
- Read permissions on the master database of the source database SQL Server (only required if the BC license is uploaded to the SQL server)
- Create database and linked server permissions on MS SQL Server where the BI4Dynamics DWH will be deployed.
- Granted Server role on MS SQL Analysis Services where the BI4Dynamics OLAP cubes will be deployed. Additionally, the Analysis Server service should run under BI4Dynamics domain account.
- SQL Agent job Service user account needs all the above stated permissions.

Note:

All six (6) accounts can be combined into one (1) Windows domain account. One Windows domain account is preferred.

2. Windows Server

Hardware

A dedicated infrastructure for BI stack is required with following specifications:

- **CPU: 4 – 8** Intel® processors or equivalent (at least 2GHz)
The more cores the better as SSIS option can run parallel on as many cores as there are available. Using SSIS option can speed up processing Stage and Data warehouse by 30 to 50%
- **RAM:** minimum recommendation:
 - 16 GB RAM for BC database size < 50 GB
 - 32 GB RAM for BC database size 100 ... 250 GB
 - 64 GB RAM for BC database size 250 ... 500 GB
 - 128 GB RAM for BC database size 500... 1000 GB
 - 256 GB RAM for BC database size 1000...2000 GB
 - 384 GB RAM for BC database size 2000...4000 GB
 - 512 GB RAM for BC database size > 4000 GB

Consult us for larger databases as our recommendations depend on table structures

- **Disk space** depends on the size of BC database, we recommend:
 - 1.25 x size of Dynamics BC database used when no SSIS option is used
 - 2 x size of Dynamics BC database used with SSIS option is used

SSIS options needs more space as more tables are processed at the same time so more disk is needed for temporary calculations. The result – size of BI4Dynamics DW - will be about 30- 50% of BC database. If possible, use SSD hard drive, which processes data about 30 – 50 % faster than standard 15k disks.

Please contact us on details when databases larger than 2 TB to get HW recommendation based on table structure.

Notes:

BC database vs number of BI users

Hardware configuration should correspond to the size of Microsoft Dynamics database (this is important) and to lesser extent to the number of analytical users (this is less important).

Rules for fast processing:

Enough RAM: RAM amount under the recommended size will significantly affect the processing speed.

Fast disks: Most important parameter as large set of data are read and written each time.

Good CPU with many cores

Setting up Analysis Services Tabular

System requirements for Tabular model are different from Multidimensional model. While Multidimensional requirements are like Data warehouse requirements (fast disks, many cores for parallelism), Tabular requires fast CPU and fast memory. It is possible to set Analysis Services database on a separate BI server.

These are hardware components that effect performance for Tabular engine:

CPU

- Faster CPU speed is the better and will affect query time (interaction between front end tools (Excel and Power BI) and Tabular engine when user is analyzing data)

Memory

- Faster memory is better
- Memory size should be 2 X of sum of size of all Tabular databases
- If there is not enough memory that data will be partly written to the disk and performance will be slow
- Limitation of Analysis Service Standard Edition is 16 GB

Software

- Windows Server 2012, 2012 R2, 2016, 2019
- UAC should be disabled, or application needs to be installed outside Program Files folder
- .NET Framework 4.7.2
- Network availability:
 - **Online servers:** Server is connected to the Internet with port 80 opened (if the server is under proxy, the application needs access to our authorization web service)
 - **Offline servers:** special offline license is required; please contact sales@bi4dynamics.com for further assistance.

3. SQL Server

General

All BI4Dynamics features run on **Standard** SQL Edition. It is understood that it can run also on BI or Enterprise edition.

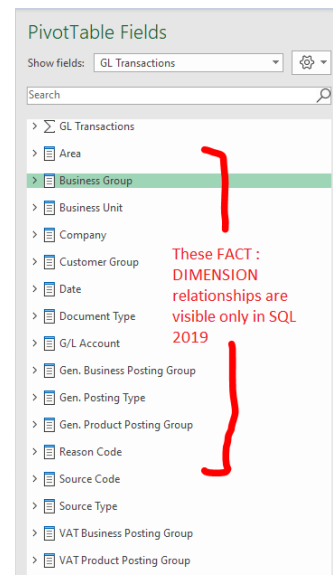
- Microsoft SQL Server **Standard** Edition from version **2016** (latest build) and above (recommend **SQL 2019***) with
 - Database Engine
 - Analysis Services (2 instances are needed):
 - **Tabular instance for Operational modules (cubes)**
This will be the main instance for BI project
 - **Multidimensional instance for Finance module (cube)**
Custom Rollup feature is only supported in [Multidimensional edition](#) of SQL server and Account Schedule functionality requires this feature; Account Schedules are the most important feature in **Finance cube** therefore this is a must have.
 - Integration Services
 - SQL Agent
- All services run under the windows domain user with appropriate permissions
- Separate partitions for **Data + Log + Temp** (8 files for data and temp db of same size)

- *Notes: To introduce additional speed improvements, it is recommended to put data files on a RAID 5 for fast read speeds and log & temp files on RAID 1 for fast write speeds.*
- *For Microsoft Dynamics BC databases, the collation of the data warehouse server should match the collation of the BC server*

SQL version and edition

If customer can install **Enterprise** edition, currently there will be no difference in features or performance. Starting 2021 BI4Dynamics will support SSAS Partitions, which will speed up SSAS database update. Therefore, if the license for **Enterprise** is available at no additional cost to **Standard** edition, we would recommend installing **Enterprise** edition now already. If there is a cost, we would not.

In **SQL Standard Edition** we strongly recommend **SQL Server 2019** in Standard due to supporting new features, showing dimensional: fact relationship as one of them.



4. Source database (BC)

- BC license needs to be uploaded either on the server (to the master database of SQL instance) or into the BC database
- There must be at least one entry in Currency and Country tables per Company (only applies to companies you intend to use in BI4Dynamics)
- If you use non-default SQL port (1433), then you have to add SQL port number when adding the data source in BI4Dynamics. SQL port number must be added after SQLServerName and must contain prefix ",". Example "SQLServerName,SQLPort \ SQLInstance".

*If the BC license is uploaded to BC (SQL) server, then user also needs read permission on master database of SQL Server where BC database resides. *Only BC W1-World Wide version is supported*