



**Gladstone Health & Leisure
Technical Services**

**Plus2 Environment
Server Recommendations**

Commercial in Confidence



Database Server Specifications

Database server specifications are based on database sizes in use on the server. Select the column which best represents the projected database size after three years.

Note: these specifications are based on a database server dedicated to running Plus2

Disk space calculations

Disk space requirements are based around the Plus2 database size. A number of factors (listed to the right) can influence the amount of disk space required.

For calculation purposes a factor of 11 can be applied to the database size to give you a good indication of required disk space for Plus2.

Note:
OS and applications will require addition disk space

- Plus2 live database
- Plus2 training database
- Plus2 test/evaluation database
- Plus2 archive database
- Working space for SQL maintenance plans
- Transaction log backups
- 3 days of data backups
- Business Continuity transfer process
- Non SQL file structure
- Offline reports data backup
- Offline reports database

Database Server Specifications

	Up to 4GB database	Up to 8GB database	Up to 16GB database	Up to 32GB database
Technical requirement	RAM: 1GB OS / 3GB SQL Data disk space: 11 x 4GB = 44GB	RAM: 1GB OS / 7GB SQL Data disk space: 11 x 8GB = 88GB	RAM: 2GB OS / 14GB SQL Data disk space: 11 x 16GB = 176GB	RAM: 2GB OS / 30GB SQL Data disk space: 11 x 32GB = 352GB
Dual Core Processors	1 x Dual Core Intel® Xeon® L5240, 6MB Cache, 3.0GHz, 1333MHz FSB	1 x Quad Core Intel® Xeon®X5450, 2x6MB Cache, 3.0GHz, 1333MHz FSB	1 x Quad Core Intel® Xeon®2.0 GHz	2 x Quad Core Intel® Xeon®X5460, 2x6MB Cache, 3.16GHz, 1333MHz FSB
RAM	4GB	8GB	16GB	32GB
Hard Disks	4 x 73GB (15K) RAID 5 1 x 73GB (15K) HS	4 x 73GB (15K) RAID 5 1 x 73GB (15K) HS	2 x 36GB (15K) RAID 1 3 x 146GB (15K) RAID 5	2 x 36GB (15K) RAID 1 4 x 146GB (15K) RAID 5
CD/DVD Rom Drive	YES	YES	YES	YES
Network Cards	Dual network adapters	Dual network adapters	Dual network adapters	Dual network adapters
Power Supplies	Redundant Hot plug PSU	Redundant Hot plug PSU	Redundant Hot plug PSU	Redundant Hot plug PSU
Backup Unit	72GB DAT Drive or LTO-4 tape drive	72GB DAT Drive or LTO-4 tape drive	LTO-4 tape drive	LTO-4 tape drive
Note: The operating system versions and SQL versions must be capable of accessing the memory within a server				
Operating System	Windows Server 2003 Standard Windows 2008 server standard	Windows Server 2003 Enterprise Windows 2008 server Enterprise 32bit Windows 2008 server Standard 64 bit	Windows Server 2003 Enterprise Windows 2008 server Enterprise 32bit Windows 2008 server Standard 64 bit	Windows Server 2003 Enterprise Windows 2008 server Enterprise 32bit Windows 2008 server Standard 64 bit
Database Software	Microsoft SQL 2005 Standard (may require per processor licensing)	Microsoft SQL 2005 Standard (may require per processor licensing)	Microsoft SQL 2005 Standard (may require per processor licensing)	Microsoft SQL 2005 Standard or Enterprise (may require per processor licensing)

Additional Database Server Information

- SQL server may need licensing on a per processor basis if online bookings is to be used
- Any scenarios with a database size over 34GB will require 64bit operating system and potentially SQL 2005 data centre edition
- It is recommended that servers housing databases up to 16GB are dual processor capable (dual socket) so a second processor can be added if required.
- It is recommended that servers housing databases up to 32GB are quad processor capable (quad socket) so additional processors can be added if required.
- In the event that a database size grows over the original estimate, data housekeeping and/or additional RAM will be required. Data housekeeping requires Plus2 Version 9.1 or higher

Application Server Specifications

Application server specifications and the quantity of servers required are based on the number of users expected to be running Plus2 across the server farm. Farm resilience is maintained using an N+1 principle. This allows a server can be taken offline if required without effecting farm performance.

The following server specification is capable of running approximately 40 Plus2 users however a minimum of two application servers would be recommended for systems with less than 40 users running Plus2.

Application Server Specifications

Processors	1 x Quad Core Intel® Xeon® E5440, 2x6MB Cache, 2.83GHz, 1333MHz FSB
RAM	4GB
Hard Disks	2 x 73GB (15K) RAID 1
CD/DVD Rom Drive	YES
Network Cards	Dual network adapters
Power Supplies	Redundant Hot plug PSU
Operating System	Windows Server 2003 Standard

Additional Information

- Farm resilience should be maintained by adding additional servers
- Citrix Presentation Server 4.0 or 4.5 may be required if the server is to go in to a Citrix Farm.

Offline Reports Server Specification

An offline reports server (ORS) is used to remove the processing overhead of running reports from the live server. The ideal specification of an offline reports server would be exactly the same as the live database server, however the cost of introducing such a server may be too high. As a result an offline reports server specification is lower than the live database server as speed of processing is not normally a key factor when running reports from an ORS.

Key points:

- A small number of users relative to the live estate will have access to this server therefore a bigger database can run on a lower specification of server compared with the live database server.
- The SQL versions on the offline reports server needs to be the same as the live database server however this server will not be used for online bookings and therefore may not need a per processor licence

Reports Server	DS-OR	DS-ORE
Processors	1 x Quad Core Intel® Xeon® E5430, 2x6MB Cache, 2.66GHz, 1333MHz FSB	1 x Quad Core Intel® Xeon®X5460, 2x6MB Cache, 3.16GHz, 1333MHz FSB
RAM	8GB	16GB
Hard Disks	4 x 73GB (15K) RAID 5	4 x 73GB (15K) RAID 5
CD/DVD Rom Drive	YES	YES
Network Cards	Dual network adapters	Dual network adapters
Power Supplies	Redundant Hot plug PSU	Redundant Hot plug PSU
Operating System	Matched with live server	Matched with live server
SQL versions	Matched with live server	Matched with live server

Web Server Specifications

The following is a typical specification of a server designed to run Gladstone's Connect Online Booking system. If other web sites are to co-exist on the same physical server then a higher specification may be required.

Key points:

- Required disk space is low, typically less than 100MB. The most cost effective disk size should be selected when purchasing the server.
- When buying new a server a Quad core processor may be more cost effective than the dual core specified below.

Web Server (IIS)	
Processors	1 x Dual Core Intel® Xeon® E5205, 6MB Cache, 1.86GHz, 1066MHz FSB
RAM	2GB
Hard Disks	2 x 36GB (15K) RAID 1
CD/DVD Rom Drive	YES
Network Cards	Dual network adapters
Power Supplies	Redundant Hot plug PSU
Operating System	Windows 2003 Server Standard with IIS enabled