Macola Hardware Requirements
Technical Documentation

Introduction to Macola Progression Supported Platforms

Click on a link below to jump to that section of the document.

For supported platforms, refer to the Macola Supported Platforms document in the Macola Reference Library.

Top of the Document

Latest Macola Hardware Requirements Updates

March 5, 2002

Added link to Web Views/Web Orders hardware requirements in the Setup and Implementation guides.

February 11, 2002

Added note on IIS server installation with Web.Views/Web.Orders

December 7, 2001

Changed all references to 7.5.103 to 7.6

Top of the Document

General Overview of Hardware Requirements

Disclaimer

Many variables determine the performance of an application. These variables include, but are not limited to, available server and workstation resources, available network bandwidth, server and workstation bandwidth, other applications being run on the server and/or workstation, etc. It is impossible for a document of this nature to predict the performance of an application based solely on the base hardware configuration.

The recommended hardware listed in this document should be considered a minimal system configuration. Systems that exceed the recommendations in this document will typically provide improved operating performance. Though Macola products will run on systems that do not meet these recommendations, users may encounter unacceptable system performance.

The information in this document is provided with the assumption that Macola Progression is the primary application. Other applications will require additional system resources and may require additional hardware for adequate performance.

Server Hardware

The configurations provided for servers in this document refer to “server grade” hardware, not high performance workstation hardware. Server grade hardware provides higher levels of scalability, multi-processor capability, etc. Users that attempt to implement non-server grade hardware for server applications may not achieve adequate application performance.

RAID Configurations

This document recommends using RAID 1 for storing the operating system and SQL transaction logs, and RAID 5 for data and application storage. An excellent RAID configuration resource is located at http://www.microsoft.com/TechNet/winnt/ntserv.asp?a=printable

Remote Connection for Problem Resolution:

At times Macola support technicians will request remote access to your system to aid in problem analysis and resolution. Macola uses Symantec’s *pcAnywhere For Windows*, *Citrix MetaFrame client* and *Windows 2000 WTS client* for remote connection. The hosting software must be installed and configured before Macola Support can attempt the remote connection (Macola Support cannot assist with installation or configuration of the remote hosting software). When a Macola support technician requests remote access to your system, someone in your organization must be able to provide the following:

- **All Remote connections** will require the Macola Progression Supervisor name and password. Some connections may also require the Network Administrator name and password.
- **pcAnywhere:** Start pcAnywhere host on the system to be accessed, and provide the Macola Support technician with the modem telephone number or TCP/IP address and password for pcAnywhere.
- **Citrix ICA/WTS Client:** Provide the Macola Support technician with the Citrix Server modem telephone number or TCP/IP address, username, password, and Domain name to provide access to the system.
- **For Macola Progression SQL remote access**, the following SQL Server client utilities must be installed host device: Query Analyzer, Enterprise Manager, and Profiler.

Top of the Document

Macola Progression SQL V7.6

Progression SQL V7.6 and Application Server

Macola Progression SQL V7.6 with SalesLogix

Macola Web.Views / Web.Orders - IIS Server

Progression SQL V7.6 and Application Server

Select one:

- **Combined Application/ Microsoft SQL Server (1-75 Users)**
- **Dedicated Microsoft SQL Server and Application Servers (75+ Users)**

Combined Application/ Microsoft SQL Server (1-75 Users)

Operating System	Number of Users	Processors	Memory	Hard Drives	SCSI/RAID Configuration	Other
Windows NT 4.0 or Windows 2000 and MS SQL Server 7 or SQL Server 2000	1-25	Pentium III 500 mHz or higher	512 MB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and SQL Transaction files **RAID 5** for SQL server database and application installation	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS
	26-75	Dual Pentium III 500 mHz or higher	*1 GB*	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and SQL Transaction files **RAID 5** for SQL server database and application installation	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS

Top of the Document

Dedicated Microsoft SQL Server and Application Servers (75+ Users)

Operating System	Number of Users	Processors	Memory	Hard Drives	SCSI/RAID Configuration	Other
DEDICATED SQL SERVER REQUIREMENTS						
Windows NT 4.0 or Windows 2000 and MS SQL Server 7 or SQL Server 2000	75-100+ *	Dual Pentium III 500 mHz or higher	1.5-2 GB + *	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and SQL Transaction files **RAID 5** for SQL server database	RAID controller 3.5" floppy drive CD-ROM drive Backup device UPS
DEDICATED APPLICATIONS SERVER REQUIREMENTS						
Windows NT 4.0 or Windows 2000	51-100+	Dual Pentium III 500 mHz or higher	1-1.5 GB	SCSI - 2-10,000 RPM Drives (for RAID 1)	**RAID 1** for NT OS and Application installation	RAID controller 3.5" floppy drive CD-ROM drive Backup device UPS

The maximum memory utilized by the Standard Editions of SQL Server 7 and SQL Server 2000 is 2 GB. Installations with more than 100 concurrent users may need more than 2 GB of RAM. In these situations, the server must be upgraded to the Enterprise version of SQL server. The SQL server should be monitored to determine if additional RAM and/or Processors are required for acceptable performance.

Notes:

- Please refer to the memory configuration section, page 16, for memory details.
- 100mbps or higher LAN connections recommended
- Total required disk space is determined by number of transactions and Progression modules installed.

Top of the Document

Macola Progression SQL V7.6 with SalesLogix

SalesLogix Applications/Microsoft SQL Server

Operating System	Number of Users	Processors	Memory	Hard Drives	SCSI/RAID Configuration	Other
Windows NT 4.0 or Windows 2000 and MS SQL Server 7 or SQL Server 2000	1-25	Pentium III 600 mHz or higher	512 MB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and SQL Transaction files **RAID 5** for SQL server database and application installation	RAID controller 3.5" floppy drive CD-ROM drive Backup device UPS
	26-100	Dual Pentium III 600 mHz or higher	512 MB-1 GB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and SQL Transaction files **RAID 5** for SQL server database and application installation	RAID controller 3.5" floppy drive CD-ROM drive Backup device UPS

Note: Implementing SalesLogix requires an additional server. In this two-server environment, there are two acceptable configurations:

Scenario 1:

Server 1 is configured as a combined the Macola Progression application server and the Microsoft SQL server for the Progression SQL data.

Server 2 is configured as the SalesLogix application server and the Microsoft SQL server for the SalesLogix data.

It is important to note that if this scenario is implemented, both SQL servers must have the same version and service pack revision of SQL server installed. Macola will not support mixed versions of SQL server on different servers.

The advantage of this configuration is that an existing Progression SQL installation does not need to be reconfigured when SalesLogix is installed.

Scenario 2:

Server 1 is configured as the application server for both Macola Progression SQL and SalesLogix.

Server 2 is configured as the Microsoft SQL server for both the Progression SQL and SalesLogix databases.

The advantages of this scenario include a possible reduction in the Microsoft SQL licenses and easier database backups.

Additionally, Server 1 (applications server) would only need to be configured with a RAID 1 controller, as it would store only the application and not the critical data.

Notes:

- 100mbps or higher LAN connections recommended
- Total required disk space is determined by number of transactions and Progression modules installed.

Top of the Document

Macola Web.Views / Web.Orders - IIS Server

Operating System	Number of Users	Processors	Memory	Hard Drives	SCSI/RAID Configuration	Other
Windows NT 4.0 or Windows 2000 and MS SQL Server 7 or SQL Server 2000	1-25	Pentium III 600 mHz or higher	512 MB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS	RAID controller 3.5" floppy drive CD-ROM drive Backup device UPS
	26-100	Dual Pentium III 600 mHz or higher	512 MB-1 GB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS	RAID controller 3.5" floppy drive CD-ROM drive Backup device UPS

Bandwidth Requirements:

Web.Views/Web.Orders require minimum connection speeds (10mb) between the web server and the ISP, and between the web server and the Progression SQL server. Higher bandwidth is required between the web server and the ISP:

Concurrent Users	Minimum Required Bandwidth
1-25	256 KB/Sec
25-50	Fractal T1
50-100	Full T1

To ensure the security of the Progression SQL data, a firewall or Proxy server must exist between the Internet and SQL server. The firewall or Proxy server can be located on either side of the web server, but if located between the web server and the SQL server, the default SQL port (1433) must be open for communication.

Notes:

- Follow the Microsoft Q Article Q216425 exactly. This article is found at http://support.microsoft.com/support/kb/articles/Q216/4/15.ASP
- The IIS Server must be an additional server, **not** the Proxy Server or Progression SQL Server. The IIS Server **cannot** be externally hosted.

- If a Proxy server will be installed SQL Server is **not** installed on a Proxy Server. The SQL client is **not** installed on a Proxy Server.
- For full details on configuring an environment for Web.Views, please reference the Web.Views and Web.Orders, available on the support website at the Macola Reference Library page.

Top of the Document

Macola Progression V7.6 (Pervasive.SQL database)

Combined Application/Pervasive.SQL Server

Operating System	Number of Users	Processors	Memory	Hard Drives	SCSI/RAID Configuration	Other
Windows NT 4.0 or Windows 2000	Up to 10	Pentium III 450 mHz or higher	128 - 256 MB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and Pervasive.SQL installation **RAID 5** for Progression Applications and Pervasive.SQL data storage	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS
	11-25	Pentium III 450 mHz or higher	256 - 512 MB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and Pervasive.SQL installation **RAID 5** for Progression Applications and Pervasive.SQL data storage	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS
	26-50	Dual Pentium III 450 mHz or higher	512 MB - 1 GB +	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and Pervasive.SQL installation **RAID 5** for Progression Applications and Pervasive.SQL data storage	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS
Novell NetWare 5.1, 4.2	Up to 10	Pentium III 450 mHz or higher	128 - 256 MB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and Pervasive.SQL installation **RAID 5** for Progression Applications and Pervasive.SQL data storage	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS

Operating System	Number of Users	Processors	Memory	Hard Drives	SCSI/RAID Configuration	Other
	11-25	Pentium III 450 mHz or higher	256 - 512 MB	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and Pervasive.SQL installation **RAID 5** for Progression Applications and Pervasive.SQL data storage	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS
	26-50	Dual Pentium III 450 mHz or higher	512 MB - 1 GB +	SCSI - 5-10,000 RPM Drives (2 for RAID 1 and 3 for RAID 5)	**RAID 1** for NT OS and Pervasive.SQL installation **RAID 5** for Progression Applications and Pervasive.SQL data storage	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS

*NetWare Server RAM configuration is based on the following:

- 2-8 GB disk space = 64 MB RAM
- 8-12 GB disk space = 96 MB RAM
- 12-16 GB disk space = 128 MB RAM
- 16 + GB disk space = Add 32 MB RAM per additional 4 GB storage space

Notes:

- 100mbps or higher LAN connections recommended
- Total required disk space is determined by number of transactions and Progression modules installed.

Top of the Document

Standard Client (Workstation) requirements for all Macola Products

Operating System	Processors	Memory	Hard Drives	Browser	Other
Windows 98 Millennium Edition NT 4.0 2000 Professional	Pentium III 450 mHz or higher	128 MB	UDMA-66 IDE 1 GB space available	Microsoft Internet Explorer version 5	3.5” floppy drive CD-ROM drive Video capable of minimum 800 x 600 resolution with 256 colors.

Notes:

- 100mbps or higher LAN connections recommended
- Additional memory may be required based on the total number of applications running on the workstation

Top of the Document

Citrix MetaFrame/Windows 2000 Terminal Services Server

Operating System	Number of Users	Processors	Memory	Hard Drives	SCSI/RAID Configuration	Other
Windows NT 4.0 Terminal Server with Citrix MetaFrame 1.8 or Windows 2000 with Windows Terminal Services (MetaFrame 1.8a or MetaFrame XP optional)	Up to 15	Pentium III 700 mHz or higher	256-512mb	SCSI - 2-10,000 RPM Drives for RAID 1 Controller	**RAID 1**	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS
	16-30	Dual Pentium III 700 mHz or higher	512MG-1GB	SCSI - 2-10,000 RPM Drives for RAID 1 Controller	**RAID 1**	RAID controller 3.5” floppy drive CD-ROM drive Backup device UPS

If more than 30 remote users will access Macola Progression, multiple WTS or MetaFrame servers must be implemented. Use the above hardware recommendations when adding additional host servers.

Notes:

- The servers described on this page must be dedicated to the task of running Citrix MetaFrame or Windows 2000 Terminal Services. Macola does not support using this server as a database (MS SQL Server or Pervasive.SQL services) or applications server. Do not install MS SQL Server, Pervasive.SQL 2000 or any applications on the Citrix MetaFrame or Windows 2000 Terminal Services server.
- 100mbps or higher LAN connections recommended
- Memory is based on 32 MB per user plus 64 MB for the operating system
- Processors requirements are based on 15 users per processor

Top of the Document

Citrix/Windows Terminal Server Remote Clients

Operating System	Processors	Memory	Hard Drives	Other
Windows 2000 Professional	Pentium II 500 mHz or higher	64 MB	4 GB IDE	3.5" diskette drive, CD, Video capable of minimum 800 x 600 resolution with 256 colors
Windows NT 4.0	Pentium 200 mHz or higher	64 MB	2 GB IDE	3.5" diskette drive, CD, Video capable of minimum 800 x 600 resolution with 256 colors
Windows 95 Windows 98	Pentium 133 mHz or higher	32 MB	500 MB IDE	3.5" diskette drive, CD-ROM drive, Video capable of minimum 800 x 600 resolution with 256 colors
Windows ME	Pentium 166 mHz or higher	64 MB	1GB IDE	3.5" diskette drive, CD-ROM drive, Video capable of minimum 800 x 600 resolution with 256 colors
Windows 3.11	486	8 MB	500 MB IDE	3.5" diskette drive, CD-ROM drive, Video capable of minimum 800 x 600 resolution with 256 colors
DOS 6.22	486	4 MB	200 MB IDE	3.5" diskette drive, CD-ROM drive, Video capable of minimum 800 x 600 resolution with 256 colors

Bandwidth: Clients for Citrix MetaFrame and Windows require 24KB/sec connection rate per attached user. A standard 28.8 KB/sec modem connection provides sufficient bandwidth between the client workstation and the WTS/MetaFrame server. The required bandwidth should be calculated as:

24kb x maximum concurrent users = required bandwidth

The above bandwidth requirements are for standard video refresh rates only. Other applications that use streaming video or audio will require increased available bandwidth. Spooling large print jobs to printers attached to remote clients will also require increased bandwidth.

Notes:

- The hardware configurations listed above are absolute minimums, where the workstation is intended only as a remote client attached to a MetaFrame or Windows Terminal server. Workstations that will be used for additional local applications will require faster processors, additional memory, higher capacity hard drives, etc.
- All remote clients must be able to connect to the WTS/MetaFrame server before attempting to run Macola Progression or any other applications. Macola does not provide support for connectivity or network performance issues in this environment.

Top of the Document

Memory Configuration

When you install MS SQL Server, the default memory settings are *Dynamically configure SQL Server memory,* with the *Maximum* value set to allow SQL to use the total available server memory. Tuning this parameter will improve performance by providing additional needed memory to the server's operating system, especially when a single server is used as both the application server and SQL server.

To modify the SQL Server memory parameter, use the following steps:

1. From the Program Start Menu, select SQL Server Enterprise Manager.
2. Select Microsoft SQL Servers.
3. Select SQL Server Group.
4. Use the right mouse button and click on the SQL server.
5. Select **Properties**. This opens the Properties dialog.

6. Select the **Memory** tab. Verify that Dynamically configure SQL Server memory is selected.
7. In the **Maximum [MB]:** field, move the slide to reduce the maximum value to approximately **128 MB** less than the total available memory.
8. Click **OK**. This closes the dialog. The change takes affect immediately.
9. The above graphic illustrates a SQL Server with 512 MB RAM, configured with 128 MB RAM for the OS.

   Note: You do not need to restart the SQL Service for this change to take affect.

Top of the Document