

Choosing a Server

Introduction

When using Route Manager Series 7 in a complex environment (any time there are more than three users connected to the system), you will need to give thought and attention to the environment where this will be used. In this document, you will find information on how to select and configure your hardware to receive the best performance.

The four main areas covered are:

- Server size
- Operating systems
- The network
- Workstations

In addition, you will find other helpful tips to get your system up and running as quickly as possible.

Server size

Choosing the proper hardware is one of your first concerns. The following chart shows general guidelines for getting the right size of server box based on your needs. There are no 'absolutes' in this process. Typically, you want to buy a little bigger than your needs under all circumstances and if you are expecting substantial growing in the near future, you will want to have enough horsepower to support that growth without buying a new system. Switching to a new box is time-consuming and painful – you do not want to do it any more often than necessary.

There are some things that are recommended at any level when buying a 'serious' server. This would include:

- Multiple power supplies
- Multiple cooling fans
- Multi-processor capable
- Dual network cards
- Fast Memory
- RAID disk array system
- SSD drives
- Disk space is not critical as nearly every system has 500GB or greater.

If cost is a very important issue and you have less than five users on your system, then it is possible to save a little money and get less. It *can* be a case of false economy and we will recommend at least a system described as 'minimum' in the chart below.

Since hardware is constantly changing, it is a challenge to give prices, model numbers and other details. Likewise, it is difficult to recommend any certain brand. Generally, you cannot go wrong with the following (listed in alphabetical order):

- Dell
- HP/Compaq
- IBM

Other users have had good luck with 'white boxes' - Gateway and others. For service, reliability, general availability, and other reasons, we recommend one of the three 'major brands.'

Size	CPU #	CPU type	Memory	RAID	Drive qty	Drive speed	Power supply	OS
Minimum	1	Core i5	2 GB	Raid 1	1	Any	1	Windows XP Pro or Win 7
5 – 10 users	1	Xeon Dual Core E5	4 GB	1 OS	2	7.2k	2	Windows Server 2012 Standard
10 – 25 users	2	Xeon Quad Core E5	8 GB	1 OS 10 data	6	10k	2	Windows Server 2012 Standard
25 – 75 users	2 - 4	Xeon Quad Core E7	16 - 32 GB	1 OS 10 data	6+	15k / SSD	2+	Windows Server 2012 Enterprise
75 + users	4	Xeon 8 core E7	32 GB+	1 OS 10 data	6+	15k / SSD	2+	Windows Server 2012 Enterprise

Operating systems

No matter what hardware you buy, there is only one operating system that we recommend with your 'box.' Our only recommendation at this time is Microsoft Windows Server. While the current version is Windows 2012R2, you can still find Server 2008, too. When set up using 'Terminal Services', it represents a powerful, consistent way of adding a large number of users to your system.

The power of this system lies in the way that data is managed in the system and the way it works with our database. By keeping everything in a single box, it minimizes traffic over the network and provides the highest speed to your users. This is particularly the case if you have 5 or more concurrent desktop users and more than 5000 customers in your main table. The number of handhelds you use has little impact on the system performance.

Terminal Services Environments

Route Manager uses a file-based database, which could put an extra load on the network. While in small setups it would be fine to run across the network, it's much preferred that when using a Terminal Services environment all data reside local to the Terminal Server. This will help avoid any network bottlenecks and will keep the system running as fast as possible.

The Network

The network is also an important part of any system. By using terminal services, speed of the network is not critical if data is stored locally. Basically, a standard 100/1000 Mbit/s speed with good switches or routers is important. You do need to make sure that it is a stable system with consistent power available. You may want to put a small UPS (Uninterruptible Power Supply) on your switches. It is not recommend to use a 'hub' in your system, as hubs divide throughput between ports, and a 'switch' provides full throughput on each port; managed switches are typically not required.

Be sure that your wiring is good and that connectors on each cable are tight and secure. Also, observe distance limitations. It is recommended that Category 5 and Category 6 wiring have a length of less than 100 meters (300 feet) from any switch. If you do have a high amount of other data traffic on your network due to a high number of users (over 50) you will want to use a 1GB (1000 Mbit/s) backbone in the system. NIC (Network Interface Cards) cards for 1GB are not that expensive and switches have also dropped significantly in price over the last few years. *We highly recommend a 1 gigabit network.*

Also, if you do choose to run a peer-to-peer network (not recommended for more than five desktop users), then it is absolutely imperative to have a 1gigabit network and you will not be able to run users remotely with any degree of success. This is particularly true if you have over 1000 customer accounts on your Route Manager system.

Workstations

The beauty of using the described system is that you do not need PCs attached to the system for many of your users. You can use inexpensive 'WinTerms' or 'Thin Clients'. There are a number of these type machines on the market from HP/Compaq, IBM (Neoware), Wyse and others. They cost less than a PC, are much quicker to set up and configure and also tend to be more reliable as there are no moving parts in them – like hard drives and CD-ROMS. While they are somewhat limited in functionality, (you can't run intense graphic programs on them), they are perfect for a call center where everyone needs the same configuration for Route Manager, Word® and other such tools.

If you do decide to use a computer with your system, you will find that running Windows 7 or later will give the best performance and may avoid additional license fees. The Home edition versions are not suitable because you cannot:

- Log on to an Active Directory Domain
- Use Group Policies
- Use Roaming Policy
- Have an encrypted file system or file level access control
- Have multi-languages

It is best to use Windows 7 or Windows 8 or 10.

Conclusion

Choosing the right hardware and software is a critical part of having a successful RMAAdvanced system. If you have questions after reading this document, please feel free to call our technical support team. We have been doing this for years and would be more than happy to hear your plan and make comments as necessary so that your system works right – the first time!

Desktop Windows based PC

- Windows 7 Pro or later
- MapPoint 2013 for optional mapping module (if available)
- Wireless network for Wi-Fi
- DVD Burner or external hard disk driver for Backing Up your data
- High Speed Internet – Fiber, Cable, T3, etc.
- 100 GB Hard Disk Free Space
- 2 GB of RAM (Minimum)
- Pentium Processor, 2.0 GHz (Minimum)

**ARS highly recommends that all workstations operate on Windows 7 (or later) and Multi-User environments (2 or more users) implement a Windows Server system (Win 2012 Server Edition).*

Handheld PC

- Android handheld devices
- Pocket PC operating system – Windows Mobile 5.0 or newer up to 6.5 (not Mobile 7)
- Units from: Advantage M3, Symbol, and many others
- Optional Printer: 2”, 3” or 4” – Please visit www.PDA4USA.com
- Various supplies: Paper, stylus, etc

**Screen must be LCD and QVGA. Palm Pilots (Palm OS Operating System) are not compatible. In addition, the system will not work on a full sized VGA (640 X 480). It will only work with 320 X 240. We also at this time do not support iPhones, iPads, etc.*

Windows Server

For 5-10 Users

- Windows Server 2012 Standard
- Xeon Dual Core E5
- 4GB of RAM
- 250 GB or above hard drive (dual hard drives recommended)

For 10-25 Users

- Windows Server 2012 Standard
- Xeon Quad Core E5
- 8GB of RAM
- 500 GB or above hard drives in RAID 1 OS – 10 data
- Gigabit Network

For 25-75 Users

- Windows Server 2012 Enterprise
- Xeon Quad Core E7
- 16-32GB of RAM

- 500 GB or above in RAID 1 OS – 10 data
- Gigabit Network

For 75+ Users

- Windows Server 2012 Enterprise
- Xeon Eight-core E7
- 32GB of RAM
- 1TB or above hard drives in RAID 1 OS – 10 data
- Gigabit Network