RMG NETWORKS

Hardware and Software Requirements for Server Applications

IVS Enterprise Server Version 12.6+

Table of Contents

INTRODUCTION

Minimum Hardware Requirements Statement

Any recommendations regarding personal computers, servers and applications which may be implemented using RMG Networks software are based on RMG's experience and understanding of the customers' intended use of RMG products. As with any computer-based system, individual requirements and performance may vary. The optimal configuration of software and hardware may depend on a variety of factors, such as the configuration of the RMG software installed, outbound message activity, number of attached endpoints, number and complexity of applications monitored, the size and complexity of the user program options selected, the amount and rate of delivery of the data to the personal computer where the Enterprise Server (ES) system resides by other computer systems, and many otherfactors.

This document outlines specific selected products and application usage to determine the recommended minimum configurations for RMG server software. Unless otherwise specified, customer is responsible for provision and setup of any network/LAN devices and/or connections.

Hardware that does not meet the minimum requirements may result in varying degrees of performance degradation or failure to operate. RMG Technical Support may require bringing the hardware platform into compliance with stated specifications before support can be provided. Additional Professional Services may be required to implement the recommended changes.

ES12.6+ HARDWARE AND SOFTWARE REQUIREMENTS FOR SERVER

For other requirements please visit www.rmgnetworks.com/company/requirements

Virtual Server Installations

Customers installing RMG Networks Enterprise Server on virtual servers should consult the requirements and installation notes in the section below.

Servers running in virtual environments must meet or exceed the system requirements below, have dedicated resources (non-pooled resources of both CPU and memory), and have disk response times under 10 milliseconds.

A performance test of CPU, memory, and disk storage access will be done to ensure no host resource contention of those resources.

Virtual Server Requirements

Virtual Servers Supported	Microsoft Hyper-V 2008 R2* Microsoft Hyper-V Server 2012 R2 Microsoft Hyper-V Server 2016 VMware ESX 5.0 VMware ESX 5.5 Additional virtual servers may be compatible. Please consult with RMG Solutions Engineering for versions not listed. * Windows Server 2008 supported on upgrades only. New installs require Windows Server 2012 or Windows Server 2016.
Operating Systems	Windows Server 2008 R2 SP1 Standard* Windows Server 2008 R2 SP1 Enterprise* Windows Server 2008 R2 SP1 Datacenter* Windows Server 2012 R2 Standard Windows Server 2012 R2 Datacenter Windows Server 2016 Standard Windows Server 2016 Datacenter * Windows Server 2008 supported for upgrades only. New installs require Windows Server 2012 or Windows Server 2016.
Language Version	U.S. English
Processor	<u>Typical Requirements when SQL Express is local</u> 2 x CPUs (quad-core) or 1 CPU (8 Cores) >=1.8GHz server class <u>Requirements for when SQL Standard is local</u> Up to 4 CPUs (quad-core each) or 2 CPUs (8 cores each) **All Virtual Processing should be Dedicated, not pooled.** **When SQL is accessed remotely please consult with RMG Solutions Engineering**
Memory	Minimum - 8GB / Recommended - 16GB RAM or above (Dedicated, not pooled)

Hard Disk	Typical System using SQL Express (OS) 20GB available (Application & SQL Express) >=150Mb/s read and write, >=100GB Response times under 10 milliseconds. Large System (OS) 20GB available (Application) >=150Mb/s read and write, >=100GBs (SQL) >=150Mb/s read and write, >=100GB IOPS required > 2000 Response times under 10 milliseconds. ***For large virtual systems: customers should include internal IT/Virtual/SAN teams prior to implementation to architect together with RMG Engineers to guarantee optimal performance. *** **ALL Systems – Sequential reads > 50 Mb/s, Sequential writes > 50 MB/s, Random reads > .3 MB/s, & Random writes > .5 MB/s.**
Administrator Account	Administrator account required to install the RMG server software. With the following permissions confirmed: 　**SeBackup** (Back up files and directories) 　**SeDebug**　(Debug Programs) 　**SeSecurity** (Manage auditing and security log) UAC disabled
Dedicated Server	System resources solely reserved for RMG server, all other server applications (other roles, features, and\or services) restricted ex: no other SQL Server or IIS Web hosting or disk sharing
Network Configuration	RMG server requires static IP, IPv4. Citrix\Novell networks are not supported. Server network connection must be able to access necessary domains, servers, media players, systems, data sources and the internet as necessary. Minimum 100 Mbps connection required for Small and Medium systems. 1 Gbps required for large systems Multihomed NIC **Not** Supported.
Additional Software	.NET Framework versions 3.5SP1 and 4.5.2

Physical Server Requirements

Operating Systems	Windows Server 2008 R2 SP1 Standard* Windows Server 2008 R2 SP1 Enterprise* Windows Server 2008 R2 SP1 Datacenter* Windows Server 2012 R2 Standard Windows Server 2012 R2 Datacenter Windows Server 2016 Standard Windows Server 2016 Datacenter *Windows Server 2008 supported for upgrades only. New installs require Windows Server 2012 or Windows Server 2016.
Language Version	U.S. English
Processor	<u>Typical System using SQL Express</u> 1 CPU (8 cores) or 2 CPUs (4 Cores) >=2.4GHz server class <u>Large System using SQL Standard</u> Up to 4 CPUs (quad-core each) or 2 CPUs (8 cores each) >=2.4GHz
Memory	Minimum - 8GB / Recommended - 16GB RAM or above
Hard Disk Storage	<u>Typical System using SQL Express</u> (OS/Application)1 Server Grade 6GB/s >=500GBs (SQL) 1 Server Grade 6GB/s >=500GBs <u>Large System</u> (OS)1 Server Grade 6GB/s >=500GBs (Application) 1 Server Grade 6GB/s >=500GBs (SQL) 1 Server Grade 6GB/s >=500GBs **ALL Systems – No multiple volumes on single logical drive. No multiple logical drives on single raid arrays. RAID controller to have minimum 2GB write cache**

Administrator Account	Administrator account required to install the RMG server software with the following permissions confirmed:
	    SeBackup (Back up files and directories)
	    SeDebug (Debug Programs)
	    SeSecurity (Manage auditing and security log)
	
	UAC must be disabled

Dedicated Server	System resources solely reserved for RMG server, all other server applications (other roles, features, and\or services) restricted e.g.: no other SQL Server or IIS Web hosting or disk sharing
Network Configuration	RMG server requires static IP, IPv4. Citrix\Novell networks are not supported. Server network connection must be able to access necessary domains, servers, media players, systems, data sources and the internet as necessary. Minimum 100 Mbps connection required for Small and Medium systems. 1 Gbps required for large systems Multihomed NIC **Not** Supported.
Additional Software	.NET Framework version 4.6.2

Edge Server

Operating Systems	Windows Server 2008 R2 SP1 Standard* Windows Server 2008 R2 SP1 Enterprise* Windows Server 2008 R2 SP1 Datacenter* Windows Server 2012 R2 Standard Windows Server 2012 R2 Datacenter Windows Server 2016 Standard Windows Server 2016 Datacenter *Windows Server 2008 supported for upgrades only. New installs require Windows Server 2012 or Windows Server 2016.
Language Version	U.S. English
Processor	At least 4 Core CPU, Server Grade
Memory	Minimum - 4GB
Hard Disk Storage	Depends on amount of content maintained on primary server. 50GB available after OS is installed is sufficient for typical usage.
.Net & IIS	.NET (3.5SP1, 4.5.2), IIS >=7

Ports and Protocols (Core Product)

Contemporary Web Service based Products: SDA/InView	HTTP: 80, 8010 (Configurable) Encrypted Server (Optional) - HTTPS: 443(Configurable) in place of port 80
Design Studio, Data Studio, Design Studio Lite, Messenger (Used in conjunction with Web Ports above)	TCP: 8013, 8014
SDA Configuration	Webpage - HTTPS:443 Upgrades: FTPES 21
Netlite/Netlite II	TFTP: UDP 69, TCP:700
IP Jumpstart	UDP: 3424 Outbound from app, UDP:3425 Device response
Collectors	Data collector specific ports should be dealt with on a case by case basis and could be unique for every customer and type of data being collected
Remote SQL	TCP 1433 - data connection, TCP 1434 - server browser, HTTP/HTTPS: TCP 80/443 - Reporting Services. **These default ports are added to Windows Firewall. Configuration of third party firewall software and other network devices is the responsibility of the customer.**

Remote SQL (Optional)

Does not apply to SQL/Express running locally on same system as the RMG Server application and OS.	Must be on the domain. Only SQL Enterprise/Standard are supported SQL instance must be named SQLSYMON. SA username and password is supported as long as it has the required rights. SQL server name must be 15 characters or less. SQL clusters or Farms are currently unsupported.

Secure Server (Optional)

SSL Certificate	From trusted 3rd. party Certificate Authority (CA) or trusted CA on your domain. Self-Signed certificates are **not** supported.

Web Applications

Design Studio Lite, Device Manger, Content Courier	Must be on a Domain

RMG OnTarget News Content

Notes	To receive RMG OnTarget News subscription content, server will need internet access. http://ontarget.symon.com/symon/services/general/loginws.asmx?op=HelloWorld port 80 http://ontarget.rmgnetworks.com also resolves https://my.symon.com port 80/443 http://my.symon.com http://my.rmgnetworks.com https://my.rmgnetworks.com The SSL cert is for *.symon.com, so you will receive cert errors, stating the cert does not match the domain. It is required that this subscription communication is not filtered, modified, blocked or cached.

General Server Installation

Installation Notes	RMG Enterprise Server may need exclusions from real-time virus scan and other third-party scanning software for RMG directories, file folders, the file content therein and some running processes. Specific details on folder structure and running processes to potentially exclude is available upon request. Under special circumstances and to improve the system's performance, RMG may recommend the following: • Installing the server on a non-virtual, standalone server as part of the solution design or if doing so improves server performance issues attributed to inadequate system resources. • Modifying resource allocations to Virtual Machines • Installing SQL Standard or Enterprise. • Adding Resources including storage, memory, and CPUs to physical machines • Pre-processing calculations before being sent to the RMG server. • Increasing refresh intervals to decrease queries on the RMG Enterprise Server. • Increasing network bandwidth / reducing network latency • Increasing server IOPS / Disk write speeds

Intelligent Visual Communications, Delivered.

Trust RMG Networks for innovative visual solutions that are perfectly tailored and rapidly deployed to meet the needs of your operations. RMG is a proven leader in digital signage, providing global end-to-end implementations for more than 30 years to over one million displays. For powerful, scalable solutions that are unmatched in the industry, contact RMG Networks today at info@rmgnetworks.com or visit us at www.rmgnetworks.com.