QOGNIFY VMS 7.4 / BVI 7.4
SYSTEM REQUIREMENTS

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Modules	Supported Operating Systems	Notes
Core Service Device Manager, Multimedia Database, Versatile Applications (i.e. Analytics, LPR)	Microsoft Windows® 10 – 21H2 (Enterprise) 64 Bit Microsoft Windows® 10 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows® 11 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2022 (Standard, Datacenter) 64 Bit	▪ Latest OS updates are required ▪ Windows® Embedded is not supported ▪ Qognify Analytics works only as a 32 Bit process within a 64 Bit OS ▪ Windows 2019 (64 Bit) is recommended ▪ Please contact Qognify Sales Engineering or Support if you want to use Virtual Machines ▪ Running LPR on virtual machines may cause issues and is only supported in installations planned by Qognify ▪ Qognify does not support "Windows Nano server" ▪ AES-encrypted export assumes a CPU with AES acceleration, otherwise export duration can increase significantly
SDK Native Client Portable Viewer	Microsoft Windows® 10 – 21H2 (Enterprise) 64 Bit Microsoft Windows® 10 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows® 11 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2022 (Standard, Datacenter) 64 Bit	▪ Latest OS updates are required ▪ Windows® Embedded is not supported ▪ Windows® 10 – 22H2 (64 Bit) is recommended ▪ .NET 4.8 is required and part of the installer ▪ Desktop Experience must be activated for Windows Server ▪ The Portable Viewer has the same requirements as the Native Client, but presupposes .NET 4.8 ▪ Support of SDK for 32-Bit OS was removed in Cayuga R16
Mobile Client for iPhone/iPad	Apple iOS devices with iOS 11 or higher	▪ Optimized for iPad
Mobile Client for Android	Android devices with Android 6.0 ‚Marshmallow' or higher	▪ Optimized for tablets ▪ Future releases will require Android 7 'Nougat' or higher

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Modules	Supported Operating Systems	Notes
Web Client (legacy)	Google Chrome 118 or later Mozilla Firefox 118.0.2 or later Microsoft Edge, Apple Safari, Opera	▪ Google Chrome is recommended
Web Client (next generation)	Google Chrome 118 or later Microsoft Edge	▪ Same OS and hardware requirements as Device Manager type “Medium”
Qognify Proxy Qognify Service Registry	Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2022 (Standard, Datacenter) 64 Bit	▪ Services are in the context of the next generation WebClient ▪ Latest OS updates are required

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Modules	Supported Operating Systems	Notes
BVI Server	Microsoft Windows® 10 – 21H2 (Enterprise) 64 Bit Microsoft Windows® 10 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows® 11 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2022 (Standard, Datacenter) 64 Bit	▪ Windows® Embedded is not supported ▪ Windows 2019 (64 Bit) is recommended ▪ Qognify does not support "Windows Nano server"
BVI Client	Microsoft Windows® 10 – 21H2 (Enterprise) 64 Bit Microsoft Windows® 10 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2022 (Standard, Datacenter) 64 Bit	▪ Windows® Embedded is not supported ▪ Windows® 10 - 22H2 (64 Bit) is recommended ▪ .NET 4.8 is required and part of the installer ▪ For "Click-to-Mask" Qognify recommends an NVIDIA graphics card with CUDA support, i.e. Nvidia GTX 1050
BVI Web Service	Google Chrome 118 or later Mozilla Firefox 118.0.2 or later Microsoft Edge, Apple Safari, Opera	▪ Google Chrome is recommended
Qognify Metadata Manager (QMM)	Microsoft Windows® 10 – 21H2 (Enterprise) 64 Bit Microsoft Windows® 10 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows® 11 – 22H2 (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2022 (Standard, Datacenter) 64 Bit	▪ Windows® Embedded is not supported ▪ Windows® 2019 (64 Bit) is recommended ▪ Qognify does not support "Windows Nano server"

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Type of installation	Hardware requirement	Notes
Core Service running as Main connected to Core Service Sub (CSS)	**Recommended for <50 Core Service Subs:** CPU : Intel Core i3-12300 @ 3,5 GHz or Intel Xeon E-2314 @ 2.80GHz RAM 16 GB **Recommended for <200 Core Service Subs:** CPU : Intel Core i5-12400 @ 2.5 GHz or Intel Xeon E-2334 @ 3.40GHz RAM: 24 GB **Recommended for >200 Core Service Subs:** CPU : Intel Core i5-12500 @ 3,0 GHz or Intel Xeon E-2336 @ 2.90GHz RAM: 32 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s **Minimum:** CPU: Intel Pentium Gold G7400 RAM: 8 GB HDD: 100 GB free disk space Network: Ethernet with at least 1000 MBit/s	
Core Service running as Main without Core Service Subs (CSS) or running as CSS	**Recommended:** CPU : Intel Core i5-12400 @ 2.5 GHz or Intel Xeon E-2334 @ 3.40GHz RAM: 16 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s **Minimum:** CPU: Intel Pentium Gold G7400 RAM: 8 GB HDD: 100 GB free disk space Network: Ethernet with at least 1000 MBit/s	

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Type of installation	Hardware requirement	Notes
Core Service Device Manager (DM) (<=100 channels, video throughput < 20 MByte/s)	**Recommended:** CPU: Intel Core i5-12400 @ 2.5 GHz or Intel Xeon E-2334 @ 3.40GHz RAM: 16 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s **Minimum:** CPU: Intel Pentium Gold G7400 RAM: 8 GB HDD: 100 GB free disk space Network: Ethernet with at least 1000 MBit/s	▪ The minimum recommendation can handle up to 25 cameras with up to 10 MByte/s video throughput in total
Recoder Type BASIC Device Manager (<=100 channels, video throughput < 20 MByte/s)	**Recommended:** CPU : Intel Core i3-12100 @ 3,3 GHz or Intel Xeon E-2314 @ 2.80GHz RAM : 16 GB HDD : 500 GB free disk space @ 7200 RPM or SSD Network : Ethernet with at least 1000 MBit/s	
Recoder Type MEDIUM Device Manager (<=200 channels, video throughput < 40 MByte/s)	**Recommended:** CPU : Intel Core i5-12500 @ 3,0 GHz or Intel Xeon E-2336 @ 2.90GHz RAM : 16 GB HDD : 500 GB free disk space @ 7200 RPM or SSD Network : Ethernet with at least 1000 MBit/s	
Recoder Type HIGH Device Manager (<=400 channels, video throughput < 80 MByte/s)	**Recommended:** CPU : Dual Intel Xeon Silver 4210 @ 2.20GHz or Intel Xeon Silver 4216 @ 2.10GHz or AMD EPYC 7262 @ 3,2 GHz, RAM : 24 GB HDD : 500 GB free disk space @ 7200 RPM or SSD Network : Ethernet with at least 2 * 1000 MBit/s or 10 Gbit/s	
Recoder Type EXTREME Device Manager (<=500 channels, video throughput < 100 MByte/s)	**Recommended:** CPU : Dual Intel Xeon Silver 4216 @ 2.10GHz or Intel Xeon Gold 6234 @ 3.30GHz or AMD EPYC 7282 @ 2,8 GHz RAM : 32 GB HDD : 500 GB free disk space @ 7200 RPM or SSD Network : Ethernet with at least 4 * 1000 MBit/s or 10 Gbit/s	▪ Contact Qognify Sales Engineering for detailed project planning for more video throughput ▪ 10 GBit or multiple GBit adapter recommended

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Type of installation	Hardware requirement	Notes
Versatile Applications (i.e. Analytics, LPR)	**See Device Manager** Server-side Motion Detection depends on hardware and configuration of video streams. With a server based on a Intel Xeon Gold 5217 and Full HD video streams, up to 100 streams can be recorded and analyzed.	▪ Contact Qognify Sales Engineering or Support for a precise recommendation
Native Client / SDK / Web Client (next generation)	**Recommended:** CPU: Intel Core i7-11700 @ 2.50GHz or Intel Xeon E-2336 @ 2.90GHz RAM: 16 GB HDD: 50 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s Graphics Adapter: Radeon™ RX 6600 (with 8 GB GDDR6 RAM and 224 GB/sec memory bandwidth) or similar. **Minimum:** CPU: Intel Pentium Gold G7400 RAM: 8 GB HDD: 10 GB free disk space Network: Ethernet with 1000 MBit/s or faster Dedicated Graphics Adapter without Shared Memory, 16 Mio. colors, supporting DirectX 9.0 or higher, Memory Bandwidth >= 100 GB/s, Memory Size >= 2 GB **Recommended display resolution:** 1920 x 1080 or higher **Minimum display resolution:** 1280 x 768 (with text size 100%) 1600 x 960 (with text size 125%) 1920 x 1152 (with text size 150%)	▪ Deviation from the recommendation might cause stumbling rendering and other negative side effects ▪ Onboard graphic are not supported ▪ Qognify recommends not to use more than one Graphics Adapter ▪ Always use the latest graphics adapter drivers ▪ Qognify recommends not to use Nvidia NVS, Mobile or Matrox graphic cards due to low performance ▪ For further Graphics Cards information refer to the Graphics Cards suggestion which can be found on the Qognify PartnerWeb
BVI Server	**Minimum:** CPU : Intel Core i5-12600 @ 3,3 GHz or Intel Xeon E-2336 @ 2.90GHz RAM: 16 GB HDD: 500 GB free disk space plus 0,2 GB per camera / per day Network: Ethernet with at least 1000 MBit/s	Qognify recommends a dedicated SSD for BVI Server with 100 GB free disk space

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Type of installation	Hardware requirement	Notes
BVI Client	See „Native Client“, but at least 16 GB RAM mandatory	See all notes for „Native Client“
Qognify Metadata Manager (QMM)	**Minimum:** CPU : Intel Core i5-12400 @ 1,8 GHz or Intel Xeon E-2314 @ 2.80GHz RAM: 16 GB HDD: 500 GB free disk space plus 0,2 GB per camera / per day Network: Ethernet with at least 1000 MBit/s	▪ QMM represents the server side of QogniFinder ▪ If QMM is installed on top of an QVMS server (i.e. Core Service) add at least 8 GB RAM and configure the system in a way, that the CPU doesn‘t exceed 40% in average ▪ The installation including database files can differ from the OS drive
Qognify Proxy Qognify Service Registry	**< 50 concurrent video streams with up to 200 MBit/s overall throughput** Intel Xeon E-2314 @ 2.80GHz RAM : 16 GB Network : Ethernet with at least 1000 MBit/s **< 100 concurrent video streams with up to 400 MBit/s overall throughput** Intel Xeon E-2336 @ 2.90GHz RAM : 24 GB Network : Ethernet with at least 1000 MBit/s **< 500 concurrent video streams with up to 2 GBit/s overall throughput** Intel Xeon E-2388G @ 3.20GHz RAM : 32 GB HDD : 500 GB free disk space @ 7200 RPM or SSD Network : Ethernet with 10 GBit/s	

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General Guidelines

For the latest updated System Requirements and Parameters, please refer to our website.

Upgrades	Upgrades from R12 or later don't require different hardware, if the configuration won't be modified and a 64-bit enviroment is already in use. To upgrade an older version than R5, first upgrade the installation to Qognify VMS 7.2 and then upgrade it to 7.3 or later.
CPU	Qognify VMS and Qognify BVI are fully compatible with CPUs from Intel and AMD and general recommendations apply to both vendors. The best price-performance ratio can be expected with single-processor systems and a Processor Base Frequency >= 3 GHz Good references for main stream servers are https://en.wikichip.org/wiki/intel/microarchitectures/coffee_lake - Memory_Hierarchy and https://en.wikichip.org/wiki/intel/cores/cascade_lake_sp for highend servers.
Windows® Operating System	Always install the latest OS updates. Support for Windows® 7, Windows® 8.x, Windows® Server 2008 (R2) and all 32 bit OS has ended with Cayuga R14. Support for Windows® Server 2012 (R2) ended with Qognify VMS 7.3
Windows Clustering	▪ Windows® Server 2012 (R2) is **not** supported ▪ Windows® Server 2016 is **not** supported ▪ Windows® Server 2019 is supported ▪ Windows® Server 2022 is supported
Cloud Bridge	The transfer to the cloud adds a CPU load up to 5%. To compensate this, Qognify recommends providing 5% more CPU power or reducing the recording throughput by 5%.
Virtual environments	▪ Qognify recommends not to use clients in virtual environments, because the rendering performance is not satisfactory. ▪ Qognify recommends dedicated network interfaces. ▪ Virtualization could need more cpu power than its physical counterpart. ▪ Qognify recommends direct attached storage or iSCSI. ▪ As virtualization may in general decrease the performance, we recommend to test the planned server environment. ▪ Qognify VMS is compatible with Citrix XEN, VMware vSphere and Microsoft Hyper-V.
Thin Clients	Thin Client environments are not supported.

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General Guidelines

CPU recommendations	Video processing demands high CPU power. Qognify recommends always to use the latest, most powerful CPU models. You can find a comparison at https://www.cpubenchmark.net/high_end_cpus.html. Qognify recommends a single socket server with up to 10 physical cores.
Virus scanning	Web guard and Internet Security features must not be installed on Qognify VMS systems! To run the Qognify VMS software properly, exclude specific locations, processes and certain network traffic. Without configuring these exceptions, virus scanning may use high system resources. Additionally the scanning process may temporarily lock files, which may lead to a disruption in the recording process or even database corruption. Do not perform a real time and system scan of Qognify VMS directories containing recording databases (by default C:\Program Files\Qognify, as well as all folders under that location). Also avoid performing a real time and system scan on archive storage directories. Create the following additional exclusions: - Qognify VMS installation directory (per default “C:\Program Files\Qognify”) and all subdirectories. - Path to Multimedia Database Zone(s) Exclude real time network scanning on TCP ports: Refer to the “Qognify VMS: Used Ports” document which can be found on the Qognify PartnerWeb. Exclude network scanning of the following processes: ▪ All processes starting with VMS_* (e.g. VMS_Client.exe) ▪ CloudBridge.exe
Firewalls	Multiple ports must be available by default to allow the Qognify VMS software to function correctly in a network environment with a firewall. Please refer to “Qognify VMS: Used Ports” document which can be found on the Qognify PartnerWeb.

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General Guidelines	
Network layout	Depending on the number of cameras in your system and the resulting network bandwidth used, consider using multiple separate networks for the cameras, the clients and the storage to prevent overload on your network. Since the Qognify VMS/BVI Client does not need a direct connection to the cameras, the only module that needs access to both networks is the Qognify VMS Device Manager.
Network adapters	Limit the load of a single NIC to a maximum of 50%. Do not use teaming / bonding. Qognify recommends to enable Receive-side scaling (RSS). See also: https://docs.microsoft.com/en-us/windows-server/networking/technologies/network-subsystem/net-sub-performance-tuning-nics
Multimedia Database Filesystem	Qognify recommends NTFS for Microsoft Windows® with a cluster size of 256 KB and not Microsoft Windows® ReFS.
Microsoft® Bitlocker	Microsoft® Bitlocker can be used to encrypt the storage of the Multimedia Database. There's only a low increase in CPU usage (< 5%).
Usage of cameras	Cameras should be referenced only once. Adding a camera multiple times per installation to multiple installations will cause problems with most camera vendors. Contact Qognify Sales Engineering for further information.

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Description and Comments	Value
Maximum number of video channels to be served by Qognify VMS within one installation.	10.000 Contact Qognify Sales Engineering for detailed project planning for using more channels.
Maximum number of video channels per Device Manager server. To save storage, it is recommended to use less channels.	500
Maximum number of video channels per Device Manager server, if video analytics will run on the same server. The number of video channels depends on the CPU consumption of the applied analytics software.	20 - 80
Maximum number of alarm recordings per Device Manager	< 10 000 per hour A higher number may result in data loss.
Maximum number of servers with installed service „Core Service Sub“ being connected to the one server running the service „Core Service Main“.	250
Maximum number of Device Manager servers running in a Qognify VMS system.	250
Maximum number of AutoUpdaterClients in a Qognify VMS system.	1500
Maximum time (minutes) until all services are connected to the „Core Service Main“ when the „Core Service Sub“ has failed (same time for switching back). A failover will happen when services cannot reach the „Core Service Sub“ (e.g., if the „Core Service Sub“ or parts of the network are unavailable).	2 minutes
Maximum number of events, that can be handled Core Service	30 Mio.
Maximum tested recording throughput of a Device Manager	2.5 Gbit/s

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Description and Comments	Value
Maximum time in minutes until the secondary Device Manager has taken over control from the primary Device Manager (same time for switching back). A failover will happen (if activated) when the primary Device Manager is not accessible; the failover time span is determined to avoid flickering.	2 minutes
Maximum number of concurrent native (Windows) clients in one Qognify VMS installation.	200
Maximum number of concurrent web clients in one Qognify VMS installation.	20
Maximum number of concurrent mobile clients in one Qognify VMS installation.	50
Maximum number of attached Qognify VMS installations for Multi-Installation Login	50 independent Qognify VMS installations with an overall max. of 5000 devices. Contact Qognify Sales Engineering for detailed project planning for using more attached VMS installations.
Minimum bandwidth between a native client and any server. The required bandwidth depends on the number of video channels to be simultaneously displayed.	2 MBits/s
Recommended minimum bandwidth between „Core Service Main“ and any „Core Service Sub“. The required bandwidth depends on the number of video channels and could exceed the mentioned value significantly.	2 MBits/s
Recommended bandwidth between „Core Service Main“ and the Qognify VMS server providing patches and new loads for a remote update or upgrade of the local installation. This bandwidth is only required if automated updates and upgrades were selected in the „Autoupdater“.	10 MBits/s
Maximum number of QEI devices and states	1000 items with 10 states each