

CAYUGA R17. SYSTEM REQUIREMENTS.



Modules	Supported Operating Systems	Notes
Core Service Device Management, Multimedia Database, Versatile Applications (i.e. Analytics, LPR)	Microsoft Windows® 10 – 2004 or later (Pro, Enterprise) 64 Bit Microsoft Windows® 11 (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2012 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2012 R2 (Standard, Datacenter) 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	<ul style="list-style-type: none"> Only listed OS are supported Latest OS updates required Windows® Embedded is not supported Cayuga Analytics in general work 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 can cause issues and is only supported in installations planned by Qognify Qognify does not support the so called „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 – 2004 or later (Pro, Enterprise) 64 Bit Microsoft Windows® 11 (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2012 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2012 R2 (Standard, Datacenter) 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	<ul style="list-style-type: none"> Only listed OS are supported Latest OS updates required Windows® Embedded is not supported Windows® 10 – 21H1 (64 Bit) is recommended .NET 4.6.2 or later is required and is 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 4.6.2 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	<ul style="list-style-type: none"> Optimized for iPad
Mobile Client for Android	Android devices with Android 6.0 ‚Marshmallow‘ or higher	<ul style="list-style-type: none"> Optimized for tablets Future releases will require Android 7 ‚Nougat‘ or higher

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Webclient	<p>Google Chrome >= 80 Mozilla Firefox >= 78 Microsoft Internet Explorer >= 11 Microsoft Edge, Apple Safari, Opera</p>	<ul style="list-style-type: none"> Google Chrome recommended
BVI Server	<p>Microsoft Windows® 10 – 2004 or later (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2012 R2 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit</p>	<ul style="list-style-type: none"> Only listed OS are supported Windows® Embedded is not supported Windows 2019 (64 Bit) is recommended Qognify does not support the so called „nano server“
BVI Client	<p>Microsoft Windows® 10 – 2004 or later (Pro, Enterprise) 64 Bit Microsoft Windows Server® 2012 R2 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2016 (Standard, Datacenter) 64 Bit Microsoft Windows Server® 2019 (Standard, Datacenter) 64 Bit</p>	<ul style="list-style-type: none"> Only listed OS are supported Windows® Embedded is not supported Windows® 10 - 21H1 (64 Bit) is recommended .NET 4.6.2 or later is required and is part of the installer For “Click-to-Mask” we recommend an NVIDIA graphics card with CUDA support, i.e. Nvidia GTX 1050
BVI Web Service	<p>Google Chrome >= 80 Mozilla Firefox >= 78 Microsoft Internet Explorer >= 11 Microsoft Edge, Apple Safari, Opera</p>	<ul style="list-style-type: none"> Google Chrome recommended

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Type of installation	Hardware requirement	Notes
Core Service running as Main connected to Core Service Sub (CSS)	<p>Recommended for <50 Core Service Subs: CPU : Intel Core i5-9400 @ 2.90GHz or Intel Xeon E-2124G @ 3.40GHz or Intel Xeon E-2224G @ 3.50GHz RAM 16 GB</p> <p>Recommended for <200 Core Service Subs: CPU : Intel Core i5-9600K @ 3.70GHz or Intel Xeon E-2126G @ 3.30GHz or Intel Xeon E-2226G @ 3.40GHz RAM: 24 GB</p> <p>Recommended for >200 Core Service Subs: CPU : Intel Core i7-9700K @ 3.60GHz or Intel Xeon E-2186G @ 3.80GHz or Intel Xeon E-2276G @ 3.80GHz RAM: 32 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s</p> <p>Minimum: CPU: Intel Core i3-9100 @ 3.60GHz RAM: 8 GB HDD: 100 GB free disk space Network: Ethernet with at least 1000 MBit/s</p>	
Core Service running as Main without Core Service Subs (CSS) or running as CSS	<p>Recommended: CPU : Intel Core i5-9600K @ 3.70GHz or Intel Xeon E-2126G @ 3.30GHz or Intel Xeon E-2226G @ 3.40GHz RAM: 16 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s</p> <p>Minimum: CPU: Intel Core i3-9100 @ 3.60GHz RAM: 8 GB HDD: 100 GB free disk space Network: Ethernet with at least 1000 MBit/s</p>	

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Type of installation	Hardware requirement	Notes
Core Service Device Management (DM) (≤100 channels, video throughput < 20 MByte/s)	<p>Recommended: CPU: Intel Core i5-9600K @ 3.70GHz or Intel Xeon E-2126G @ 3.30GHz or Intel Xeon E-2226G @ 3.40GHz, RAM: 16 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s</p> <p>Minimum: CPU: Intel Pentium Gold G5420 @ 3.80GHz RAM: 8 GB HDD: 100 GB free disk space Network: Ethernet with at least 1000 MBit/s</p>	<ul style="list-style-type: none"> The minimum recommendation can handle up to 25 cameras with up to 10 MByte/s video throughput in total
Device Management (DM) (≤200 channels, video throughput < 40 MByte/s)	<p>Recommended: CPU: Intel Core i5-9600K @ 3.70GHz or Intel Xeon E-2126G @ 3.30GHz or Intel Xeon E-2226G @ 3.40GHz, RAM: 16 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with at least 1000 MBit/s</p>	
Device Management (DM) (≤250 channels, video throughput < 60 MByte/s)	<p>Recommended: CPU: Intel Core i7-9700K @ 3.60GHz or Intel Xeon E-2186G @ 3.80GHz or Intel Xeon E-2276G @ 3.80GHz, RAM : 16 GB HDD : 500 GB free disk space @ 7200 RPM or SSD Network : Ethernet with at least 1000 MBit/s</p>	
Device Management (DM) (≤500 channels, video throughput < 100 MByte/s)	<p>Recommended: CPU: Intel Xeon Gold 6234 @ 3.30GHz, RAM : 32 GB HDD : 500 GB free disk space @ 7200 RPM or SSD Network : Ethernet with at least 1000 MBit/s</p>	<ul style="list-style-type: none"> Get in touch with Qognify Sales Engineering for detailed project planning in case you want to use more video throughput 10 GBit or multiple GBit adapter recommended
Versatile Applications (i.e. Analytics, LPR)	<p>See Device Management 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.</p>	<ul style="list-style-type: none"> Please contact Qognify Sales Engineering or Support to get a precise recommendation

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Type of installation	Hardware requirement	Notes
Native Client / SDK	<p>Recommended: CPU: Intel Core i7-9700K @ 3.60GHz or Intel Xeon E-2186G @ 3.80GHz or Intel Xeon E-2276G @ 3.80GHz RAM: 16 GB HDD: 50 GB free disk space @ 7200 RPM or SSD Network: Ethernet with 1000 MBit/s Graphics Adapter: At least 4GB GDDR5 RAM, memory bandwidth at least 100 GB/sec.</p> <p>Minimum: CPU: Intel Pentium Gold G5420 @ 3.80GHz RAM: 4 GB HDD: 10 GB free disk space Network: Ethernet with 100 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</p> <p>Recommended display resolution: 1920 x 1080 or higher</p> <p>Minimum display resolution: 1280 x 768 (with text size 100%) 1600 x 960 (with text size 125%) 1920 x 1152 (with text size 150%)</p>	<ul style="list-style-type: none"> Deviation from the recommendation can cause stumbling rendering and other negative side effects Onboard graphic are not supported We recommend not to use more than one Graphics Adapter Please use always the latest graphics adapter drivers Qognify recommends not to use Nvidia NVS, Mobile or Matrox graphic cards (Performance too low) For further Graphics Cards information please read https://downloads.seetec-video.com/fileadmin/01DL/doc/Qognify.Cayuga.graphics.cards.suggestion-EN.pdf
BVI Server	<p>Minimum: CPU : Intel Core i7-9700K @ 3.60GHz or Intel Xeon E-2186G @ 3.80GHz or Intel Xeon E-2276G @ 3.80GHz RAM: 16 GB HDD: 500 GB free disk space @ 7200 RPM or SSD Network: Ethernet with at least 1000 MBit/s</p>	We recommend a dedicated SSD for BVI Server with 100 GB free disk space
BVI Client	See „Native Client“, but at least 16 GB RAM mandatory	See all notes for „Native Client“

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General hints

Please watch out for the latest updated System Requirements and Parameters on https://www.qognify.com/wp-content/uploads/Software/Cayuga/Q_Cayuga_R17_System_Requirements_and_Parameter.pdf

Upgrades	Upgrades from R12 or later don't require different hardware, if the configuration won't be modified and a 64-bit environment is already in use.
CPU	Cayuga and 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	Please install always the latest OS updates. Support for Windows® 7, Windows® 8.x, Windows® Server 2008 (R2) and all 32 bit OS ended with Cayuga R14.
Windows Clustering	<ul style="list-style-type: none">▪ Windows® Server 2012 (R2) not supported▪ Windows® Server 2016 not supported▪ Windows® Server 2019 supported
Virtual environments	<ul style="list-style-type: none">▪ We recommend not to use clients in virtual environments, because the rendering performance is not satisfactory.▪ We recommend dedicated network interfaces.▪ Virtualization could need more cpu power than its physical counterpart.▪ We recommend direct attached storage or iSCSI.▪ Because virtualization can in general decrease the performance, we recommend to test the planned server environment.▪ Cayuga is compatible with Citrix XEN, VMware vSphere and Microsoft Hyper-V.
Thin Clients	Thin Client environments are not supported.

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General hints

CPU recommendations

Video processing demands high CPU power. We recommend always to use the latest, most powerful CPU models. You can find a comparison at https://www.cpubenchmark.net/high_end_cpus.html. In general, we recommend single socket server with up to 10 physical cores.

Virus scanning

Please note: Web guard and Internet Security features must not be installed on Cayuga systems!

To run Cayuga software properly, it is important that you exclude specific locations, processes and certain network traffic. Without configuring these exceptions, virus scanning could use a high amount of system resources. Additionally the scanning process could temporarily lock files, which could lead to a disruption in the recording process or even to database corruption.

Do not perform a real time and system scan of Cayuga directories containing recording databases (by default C:\Program Files\Qognify, as well as all folders under that location). Avoid also to perform a real time and system scan on archive storage directories.

Create the following additional exclusions:

- Cayuga 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: Please refer to "Qognify Cayuga Used Ports" document: <https://downloads.seetec-video.com/fileadmin/01DL/6.17.1/documentation/Cayuga+BVI.Used.Ports.R17.pdf>

Exclude network scanning of the following processes:

All processes starting with VMS_* (e.g. VMS_Client.exe)

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General hints	
Firewalls	<p>Multiple ports on the server computer must be available by default to allow the Cayuga software to function correctly in a network environment with a firewall.</p> <p>Please refer to “Qognify Cayuga Used Ports” document: https://downloads.seetec-video.com/fileadmin/01DL/6.17.1/documentation/Cayuga+BVI.Used.Ports.R17.pdf</p>
Network layout	<p>Depending on the number of cameras in your system and the resulting network bandwidth used, you should consider to use multiple separate networks for the cameras, the clients and the storage to prevent an overload on your network. This depends on the bandwidth. Since the Cayuga/BVI Client does not need a direct connection to the cameras, the only module which needs access to both networks is the Cayuga Device Manager.</p>
Network adapters	<p>Limit the load of a single NIC to a maximum of 50%. Do not use teaming / bonding. We recommend 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</p>
Multimedia Database Filesystem	<p>We recommend NTFS for Microsoft Windows® with a cluster size of 64 KB and not to use Microsoft Windows® ReFS.</p>
Usage of cameras	<p>Cameras should usually be referenced only once. Configuring a camera multiple times per installation or in different installations will cause problems with several manufacturers. Please contact Qognify Sales Engineering for further information.</p>

CAYUGA R17. SYSTEM PARAMETER.

Description and Comments	Value
Maximum number of video channels to be served by Cayuga within one installation.	5000 Contact Qognify Sales Engineering for detailed project planning in case you want to use more
Maximum number of video channels per Device Manager server. A reduction of the amount of video channels might be advisable in dependence on the amount of video recordings to be stored.	500
Maximum number of video channels per Device Manager server, if also video analytics will run on the same server. The final amount of video channels will depend on the performance consumption of the applied analytics software.	20 - 80
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 Cayuga system.	250
Maximum number of AutoUpdaterClients in a Cayuga system.	250
Maximum time in 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“ anymore (e.g. if the „Core Service Sub“ or parts of the network are unavailable).	2 minutes
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 whole failover time span is determined to avoid flickering.	2 minutes

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Description and Comments	Value
Maximum number of concurrent native (Windows) clients in one Cayuga installation.	200
Maximum number of concurrent web clients in one Cayuga installation.	20
Maximum number of concurrent mobile clients in one Cayuga installation.	50
Maximum number of attached Cayuga installation for Multi Installation Login	50 independent Cayuga installations with an overall max. of 5000 devices. Contact Qognify Sales Engineering for detailed project planning in case you want to use more.
Recommended minimum bandwidth between a native client and any server. The required bandwidth depends on the number of video channels to be simultaneously displayed and could exceed the mentioned value significantly.	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 Cayuga 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 where selected in the „Autoupdater“.	10 MBits/s
Maximum number of SEI devices and states	1000 items with 10 states each