

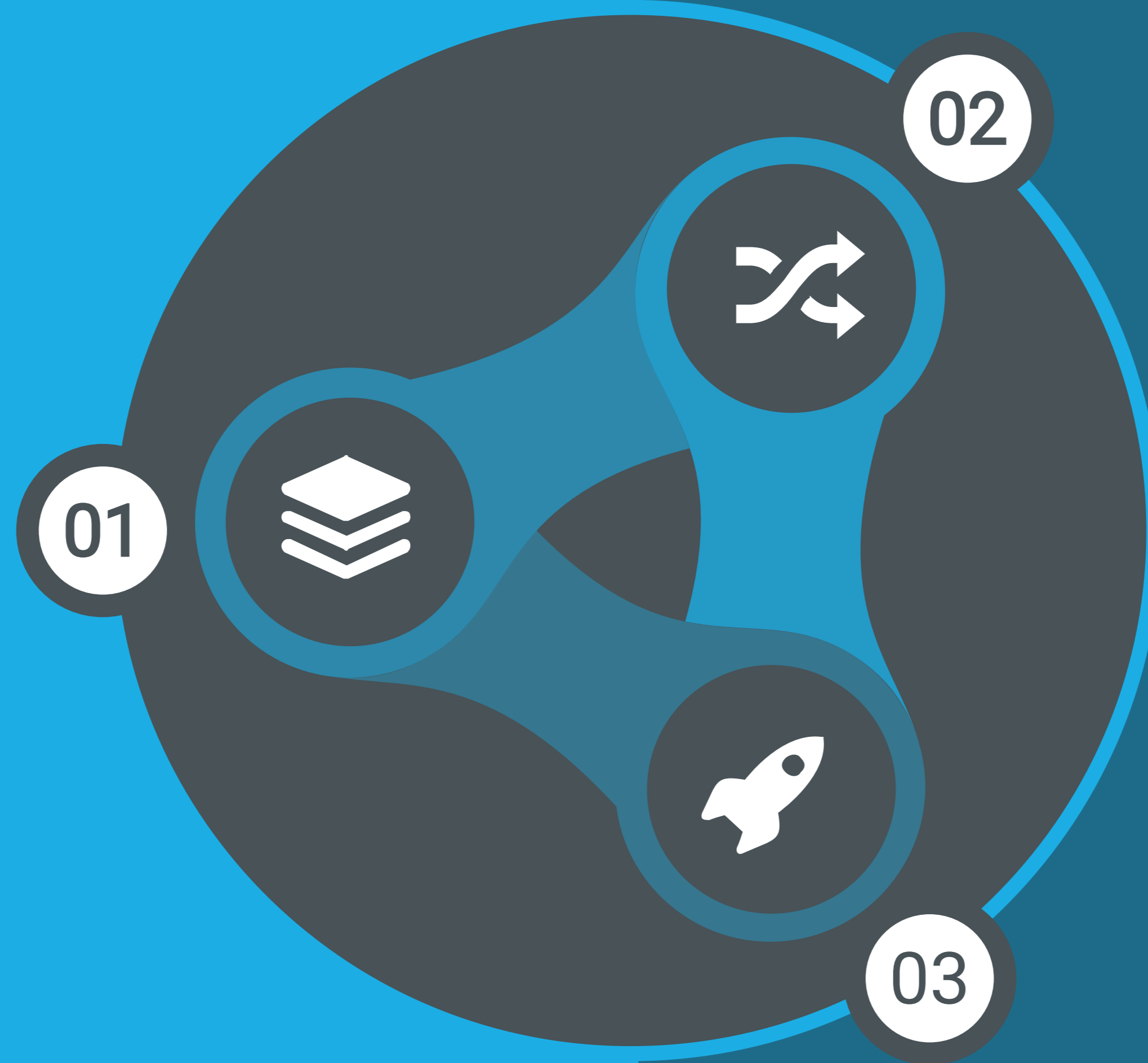
Software Quality Comparison

Nx Witness VMS vs Other VMS

Software Quality Triangle

Characteristics of Good Software.

VMS software should follow the characteristics of quality software.



01 Operational Characteristics

These are functionality based factors and related to 'exterior quality' of software.

02 Revision Characteristics

These engineering based factors of the relate to 'interior quality' of the software like efficiency, documentation and structure.

03 Transition Characteristics

The ability to use the software as part of a larger technology ecosystem.

Operational Characteristics

Functionality based factors and related to
'exterior quality' of software.



Operational characteristics include:

- Correctness
- Usability
- Integrity
- Reliability
- Efficiency
- Security

Characteristic	Impact for VMS
Correctness	The VMS meets all specifications of customer or project.
Usability	The VMS is user-friendly - for administrators and even for IT-illiterate people.
Integrity	The VMS does not create "side-effects" - harmful effects on hardware, network, or other software.
Reliability	The VMS is reliable - defect and failure-free.
Efficiency	The VMS makes effective use of storage space and executes commands quickly.
Security	The VMS keeps data secure from external threats.



Correctness

- The VMS meets all specifications of a customer or project.



Other VMS

- All “Checkmark” features of an Enterprise VMS and a single version regardless of size or complexity of the System.
- Simple pricing / licensing model with no fees for integrations.
- No ongoing support / upgrade fees.
- HTTP Generic Events, HTTP Requests as an Action, and FREE developer tools for integrating with any system.

- Features depend on version - there are different versions of Other VMS
- Licenses increase in price depending on version.
- Licensing is complex and differs depending on version and integrations.
- Ongoing support / upgrade fees (Other VMS Advantage)
- Other VMS SDK and Development Accelerator Program (DAP) - requires application and acceptance.



Usability

- The VMS is user-friendly - for administrators and even for IT-illiterate people.



Other VMS

- Nx Witness was designed to be “instantly usable” with common UX approaches inspired by Google’s Material Design.
- Single Desktop interface for administrators and other roles.
- Takes minutes to download, install, configure, and begin using (~150MB installer file).

- Skeuomorphic UX / UI mechanics reminiscent of older interfaces.
- Different interfaces (many!) for administrators and other roles.
- Takes hours to download, install and configure prerequisites, install Other VMS, update, add extensions and begin using a System.
- “We find *** to have one of the steepest learning curves in the industry.” - IPVM.com



Integrity

- The VMS does not create “side-effects” - harmful effects on hardware, network, or other software.



- Nx Witness requires no pre-requisite software and runs on just about any computing device.
- Requires no special graphics cards to use at a high level.
- Adaptive Scaling across the System reduces network and CPU usage, preventing bottlenecks in underlying computing and network infrastructure.

Other VMS

- Required to run Server
 - Microsoft SQL Server 2005 / 2008 /2012,
 - Microsoft .NET 3.5
 - Microsoft CCR & DSS Runtime 2008 T2
 - Windows Installer 3.1 or later
 - Visual C++ 2008 SP1, 2005 SP1
 - MDAC 2.8, MSXML 6.0 SP1
 - Management Objects Collection v10.1.2531.0
 - Intel Xeon processor w/ 2GG RAM
- Required to run Client
 - PCI-Express graphics card with DirectX 9.0
 - Intel® Pentium® D 2.8 GHz, 2 MB Cache
- Records a single stream from cameras, increasing CPU usage for motion analysis and increased GPU usage during recorded video playback. Optional to add different streams for live viewing / recording.



Reliability

- The VMS is reliable - defect and failure-free.



Other VMS

- Nx Witness was engineered for reliability, with FREE Automatic Camera Failover built in and requires no pre-requisite software or hardware.
- Monthly patches to address discovered real-world issues.
- ~2 million IP cameras out there - Nx gets ~10 support tickets a day.
- Nx Witness undergoes at least 16 weeks of regression testing before release, with public Beta versions.

- Failover is only available in Other VMS highest edition.
- Requires Windows Server Failover or NEC Clustering.
- No public beta versions or patches.



Efficiency

- The VMS makes effective use of storage space and executes commands quickly.



Other VMS

- ~150 MB installer file (v4.0) (Desktop client + Server app)
- Users can search an entire year's worth of archived video in less than a second with Smart Motion Search.
- Minimum Server Hardware Spec:
 - CPU: Intel® Atom™ CPU
 - RAM: 1GB

- 1.3 GB install file (compressed)
- Difficult to use on a daily basis - "subtle changes in advanced vs. basic mode may be disorienting for the user." - [IPVM](#)
- Minimum Server Hardware Spec:
 - CPU: Intel® Xeon® 3.0GHz, 2MB Cache, 800MHz FSB
 - RAM: 2GB



Security

- The VMS keeps data secure from external threats.



Witness VMS



- Secure password reset via Nx Cloud w/ invalid login timeout and minimum password standards.
- Secure connections between System components (Desktop, Mobile, Server, Web) using OpenSSL and HTTPS.
- Encrypted video streams between Clients and Servers.
- No prerequisite software to introduce additional, uncontrollable vulnerabilities.
- Customizable SSL certificates.

Other VMS

- Is dependent on Windows security infrastructure.
- Video data stored and viewed - as well as communications between system components - are encrypted.
- Customizable SSL certificates.

Revision Characteristics

The 'interior quality' of the software -
efficiency, documentation and architecture.



Revision characteristics include:

- Modularity
- Scalability
- Flexibility
- Extensibility
- Maintainability
- Testability

Characteristic	Impact for VMS
Modularity	The VMS should be divided into separate, independent parts that can be configured and tested separately.
Scalability	It should be easy to upgrade or expand the VMS.
Flexibility	Changing configuration of the VMS should be easy and straightforward.
Extensibility	The VMS should make it easy to increase the types of functions performed.
Maintainability	VMS maintenance should be easy for all types of users.
Testability	Testing the VMS should be simple and straightforward.



Modularity

- The VMS should be divided into separate, independent parts that can be configured and tested separately.



Other VMS

- Nx Witness is completely modular with a simple, straightforward architecture.

- Server Components
 - Nx Server
- Client Components
 - Nx Desktop
 - Nx Mobile
 - Nx Web
- Additional Components
 - Nx Cloud
 - Plugins (v4.0) - for integrating with 3rd party Systems or Devices.

- Other VMS has a suite of applications that are designed for different users.

- Server Components
 - Directory
 - Gateway
 - Archiver
 - Virtual Matrix
 - Watchdog
- Client Components
 - Config Tool
 - Live Viewer
 - Report Generator
 - Report Viewer
 - Server Admin
 - Archive Player
 - Web Client



Scalability

- It should be easy to upgrade or expand the VMS.



Other VMS

- No dependencies on 3rd party / prerequisite software
- Server Hive Architecture instantly discovers and merges new Servers.
- Install and configure up to 100 Servers or 10,000 cameras in a System (v4.0) with same version.
- Simple licensing (per device) w/ 1 version of software.

- Here's a link to the [168 page guide](#) on how to install, expand, and or upgrade a Other VMS Other VMS system.
- SMA pricing is 15-18% of Other VMS camera MSRP price, with up to 5-year contracts available.



Flexibility

- Changing configuration of the VMS should be easy and straightforward.



Other VMS

- Single, unified interface for admins and operators.
- Drag & Drop to re-assign cameras to Servers w/ almost no down-time for recording (~5 seconds).
- System configuration changes are instantly applied and replicated via Server Hive architecture.
- Modify Layouts in real-time and affect all users.

- “With hundreds of configuration options divided across two applications and two dozen sections, unless you are trained and regularly use Other VMS, it can be difficult to determine what and where to change. There are no 'wizards' or 'simple setup' tools. The system is optimized for power users and large scale applications.” - IPVM



Extensibility

- The VMS should make it easy to increase the types of functions performed.



Other VMS

- No license fees for integrations.
- Free Developer Tools available directly in the Nx Server Web interface.
 - Nx Server API, Nx SDKs
- HTTP Generic Events & HTTP Requests-as-an-Action for integrations in minutes
- Plugins (v4.0) for integrating with 3rd party software and hardware devices.

- License fees for integrations / key features like Mapping, LPR,
- Sign up at Other VMS to get access to their SDK and different levels of developer support (some paid).
- Native Integrations make the software large (1.3 GB installer) and harder to maintain long-term with variability to compatibility based on version.



Maintainability

- VMS maintenance should be easy for all types of users.



Other VMS

- Free Support & Upgrades - no ongoing support fees
- One-Click System-Wide Updates w/ in-client notifications, roll out and status notifications, auto-update of users' components (e.g. Desktop client) and almost no down-time (v4.0).
- Use Nx Desktop to upgrade (no other required interface).

- Other VMS Advantage - paid support as a percentage of original purchase price for licenses (e.g. 15-18% per annum).
- Dependent on 3rd party software compatibility during upgrades.
- Must use GUS (Other VMS Upgrade Service) which may require manual troubleshooting. Also, not all versions can be upgraded in a single step to the latest version (may require 2 upgrades).



Testability

- Testing the VMS should be simple and straightforward.



Other VMS

- **Free Trial** - activate license in client w/o talking to Nx.
- Free for live streaming
- Desktop / Server can be used independently.
- Cloud is optional 2 minute add-on.

- Contact Other VMS to be able to download / try the software.
- Must install entire System to test any component.
- Many add-ons required for full functionality.

Transition Characteristics

The ability to use the software as part of a larger technology ecosystem.



Transition characteristics include

- Interoperability
- Reusability
- Portability

Characteristic	Description
Interoperability	The VMS should have the ability to exchange information with other applications and make use of information transparently.
Reusability	The VMS should be flexible enough to be able to be used for different purposes.
Portability	The VMS should be able to perform the same functions across all environments and platforms.



Interoperability

- The VMS should have the ability to exchange information with other applications and make use of information transparently.



Other VMS

- Nx Witness has a REST Server API
 - Nx Storage SDK
 - Nx Video Source SDK
 - Nx Metadata SDK
 - HTTP Events & Actions
 - Built-in Browser in Nx Desktop
 - Add RTSP / UDP / HTTP Streams
- Other VMS SDK - requires application and acceptance, with varying levels of support based on status of Developer Partner.



Reusability

- The VMS should be flexible enough to be able to be used for different purposes.



- Nx Witness VMS is a Powered-by-Nx product based on Nx Meta VMP - an open video management platform that can be used for any intelligent video application.
 - Surveillance
 - Production Monitoring
 - Health & Safety
 - Training
 - Rocket Engine Testing
 - Retail Analytics
 - Etc.

Other VMS

- Other VMS Other VMS was launched as a surveillance product and is primarily sold into the “enterprise” security surveillance market.

Portability

- The VMS should be able to perform the same functions across all environments and platforms.



Other VMS

- Nx Server OS Support
 - Windows
 - Ubuntu Linux
 - ARM
 - Docker (coming soon)
- Nx Desktop OS Support
 - Windows
 - Ubuntu Linux
 - Mac OS
- Nx Mobile
 - Android
 - iOS

- Other VMS Server & Client Support
 - Windows
- Other VMS Mobile
 - Android
 - iOS

Conclusion

When looking at Nx Witness VMS through the lens of quality software characteristics there are few that compare.