



Ocularis 5

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For the full list of features, see the Ocularis Architecture & Engineering (A&E) document, available by request.

Ocularis is OnSSI's innovative and cost effective open platform Video Management Software (VMS) designed to enhance your security while simplifying your daily workload. From convenience stores to citywide deployments and everything in between, Ocularis can scale up to accommodate an infinite number of cameras to match your growing system needs.

Ocularis lets you record video from IP network cameras—as well as analog cameras using encoders—can become your Physical Security Information Management (PSIM) platform, putting you in control of advanced tools and enhanced integrations like smart motion detection, access control, biometrics, and behavior analytics.

The Ocularis platform is offered in three models—Professional, Enterprise and Ultimate—to meet the needs of organizations of all sizes and types.

Ocularis Ultimate provides centralized management of users, cameras and servers and features recording server failover, redundant management servers, multicast to client capability, edge recording support to protect against network outages, video aging for storage optimization, and also includes Ocularis VideoWall which allows for collaborative control of video walls at multiple command and control centers. Ocularis Ultimate can also incorporate camera streams from other Ocularis installations with the optional OpenSight add-on for centralized monitoring of multiple systems.

FULL-FLEDGED VMS WITH PHYSICAL SECURITY INFORMATION MANAGEMENT (PSIM) FUNCTIONALITY

Ocularis manages video and event data received from cameras connected to multiple recording servers, as well as from integrated physical security, embedded camera analytics, 3rd party video content analytics, environmental detection, transaction and other enterprise systems.

CENTRALIZED MANAGEMENT OF USERS, CAMERAS AND SERVERS

Ocularis Ultimate provides easy control and management of the entire system; user access and privileges, camera and server configurations, maps and alerts. Built-in support for Microsoft Active Directory™ authentication provides for simple and secure Single Sign-On (SSO) access to the system.

DESIGNED FOR INTEGRATION

Ocularis allows the integration of a host of add-on components via integration tools including Data Link integration events, API commands, contact closure and more. A free Software Development Kit (SDK) is also available for 3rd-party manufacturers to integrate their systems into Ocularis.

OPEN-ARCHITECTURE NON-PROPRIETARY TECHNOLOGY

Ocularis runs on non-proprietary, off-the-shelf PC hardware and supports leading manufacturers' cameras and devices. Support is built-in for all industry-standard compression formats (MPEG-4, MJPEG, H.264, H.265 and MxPEG) and the ONVIF and ONVIF Profile S standards. Ocularis Base and Ocularis Recorders are also fully supported in virtual environments such as VMware and Microsoft Hyper-V.

FAILOVER AND REDUNDANCY INCLUDED FOR MAXIMUM UPTIME

Ocularis Ultimate includes at no extra cost both recording server failover and redundant management server capabilities to keep your critical video system operational 24/7.

DYNAMIC DATA MANAGEMENT

Ocularis features efficient and dynamic data management with automatic load balancing across multiple storage volumes with no archiving requirements. Standard disks, RAID, SSDs, iSCSI NAS, SAN and even cloud storage are supported allowing you to choose the storage that best fits your needs.

SYSTEM HEALTH MONITORING

Ocularis provides real-time and detailed information to system administrators including disk utilization, camera status, support for SNMP monitoring as well as email and SMS alerts upon errors and other issues.

USER AUDIT LOGGING

All user and administrator activity may be logged by enabling auditing in Ocularis Base. An easy-to-use query tool provides easy-to-read, color-coded results with export capability for further investigation and statistical reporting.

MODERN 64-BIT VMS

All Ocularis components are optimized for 64-bit operating systems and hardware to achieve the best performance and throughput of video data.

FLEXIBLE RECORDING OPTIONS

Ocularis features both Standard (continuous Recording) and Alarm Recording, based on motion detection or other (event or motion) alarm input. Each recording mode can be configured with different retention policies ensuring that all critical video data is captured and saved. For added recording flexibility Alarm Recording can be configured to use a secondary stream. Ocularis Ultimate also features Video Aging to reduce the frame rate of recorded video for optimized long-term data retention.



CRITICAL CAMERA FAILOVER

Ocularis features automatic switching of interrupted or disconnected video streams in any live view within 2-3 seconds – including maps and blank screen events – to designated alternate camera streams. This unique feature ensures operators never lose sight of the situation.

END-TO-END DATA SECURITY

Ocularis uses modern TLS 1.2 encryption protocols to secure camera-to-server and server-to-server communications, while Client-to-server communications are secured using AES encryption. Recorded video is protected by utilizing a randomized data structure with no camera identification information.

COMPOSITE EVENTS ('EVENT FUSION')

Composite Events are created by linking two camera events or alerts, configured by sequence order, time interval and logical conditioning (e.g. 'If Door "A" opens, but no motion detection on Camera "N", within 15 seconds'). Composite Events can be fused with other events to create complex detection scenarios, and assigned priority for push video and handling by Ocularis Client operators.

SMART CAMERA DRIVERS

Smart Camera Drivers for Allnet, Arecont, Axis, Bosch, Convision, Canon, Dahua, FLIR, Grundig, Hikvision, Interlogix, Northern, Panasonic, Hanwha Techwin, Sony, THK Security, and Vivotek allow the use of new camera models immediately without waiting for model-specific drivers. Smart Camera Drivers support almost all embedded analytics and features allowing full use of the camera's capabilities.

HEVC H.265 SUPPORT

Smart Camera Drivers support the latest H.265 high efficiency video codec (HEVC) compression, providing lower bandwidth utilization and storage requirements.

SUPPORT FOR THOUSANDS OF OTHER CAMERAS

Ocularis 5 also supports thousands of cameras from dozens of technology partners with model-specific

drivers and also includes full support for ONVIF and ONVIF Profile S compatible cameras. Ocularis's extensive camera support allows customers to choose the right camera for the application.

MULTI-STREAMING SUPPORT

Ocularis takes advantage of multiple streams from cameras to minimize bandwidth usage to web, mobile and desktop Clients. With automatic stream selection, Ocularis Client displays the optimal stream for viewing. Multiple streams can also be used to optimize recording by using a lower resolution for Standard Recording and a full resolution stream for Alarm Recording.

SERVER-BASED MOTION DETECTION

In addition to supporting camera-based motion detection and analytics, Ocularis also includes efficient server-based motion detection with multiple regions of interest, each with their own sensitivity and threshold adjustments.

AUTOMATIC RECORDER PATCH UPDATES

Recorder patch updates are automatically downloaded and applied in Ocularis, keeping the system up-to-date and secure. Administrators may also choose to download and install patches manually. This is the only effective way to make sure all of your servers are updated 100% of the time.



ACCESS VIDEO ANYWHERE

Ocularis Desktop, Web, and Mobile Clients are provided license-free so video can be accessed from virtually anywhere, at any time.

INTUITIVE UNIFIED DESKTOP CLIENT

Ocularis Client offers a user-friendly operator interface with support for up to 8 displays with independent functionality and local video-wall capability. Ocularis Client requires only minimal training and free operator Client training is available online.

ADVANCED WEB AND MOBILE CLIENTS

Up to 16 cameras can be viewed live in both the Ocularis Web Client and Mobile apps. Playback, Alert Handling and AVI Export are also supported. Ocularis Mobile apps are available for Android and iOS devices free of charge and the Web Client supports multiple browsers across Mac and PC.

UNLIMITED SHARED AND PRIVATE VIEWS

On the desktop, Ocularis Client users can create and save an unlimited number of views of different sizes (up to 8 x 8 panes), consisting of camera streams, carousels, hotspots, web pages and Blank Screen panes for receiving automatic (on-event) and manual (peer-to-peer) push-video alerts.

LIVE MONITORING WITH INSTANTANEOUS INVESTIGATION

While monitoring live video feeds, users can perform basic investigation on individual cameras – playback, digital PTZ and optical PTZ (for PTZ cameras) – without the need to switch to a dedicated investigation mode.

EXCLUSIVE INVESTIGATION TOOLS

Ocularis Client's dynamic TimeSlicer™ senses motion in an area and brings the operator right to that video thumbnail in seconds instead of hours or even days. The Kinetic Timeline™ provides fast

backwards and forwards swipe navigation and color codes to help identify recorded video.

360-DEGREE CAMERA DEWARPING

Ocularis Client features native dewarping of 360-degree cameras from ACTi, Axis, Bosch, OnCam Grandeye, Panasonic, Pelco, Samsung, Sentry 360, and Vivotek as well as for cameras equipped with the ImmerVision Panamorph lens.

MULTI-LANGUAGE SUPPORT

Ocularis Client includes support for Arabic-Modern Standard, Chinese (simplified), Dutch, English, Finnish, French, German, Hebrew, Italian, Japanese, Korean, Portuguese, Russian, Spanish and Swedish.

SHARED EVENT HANDLING

All events generated within the Ocularis system – or integrated 3rd-party systems – can be handled from any Client with real-time alerting via pop-up video in the desktop Client, notifications on the Mobile Clients or pop-up alerts on the Web Client. Alerts can also be displayed on maps and shared with 3rd-party systems.

CAPTURE VIDEO ON-THE-SPOT

With M2O™ (Mobile-to-Ocularis), mobile devices can be used to stream video into Ocularis*, just like another IP camera.

*Requires a camera license.

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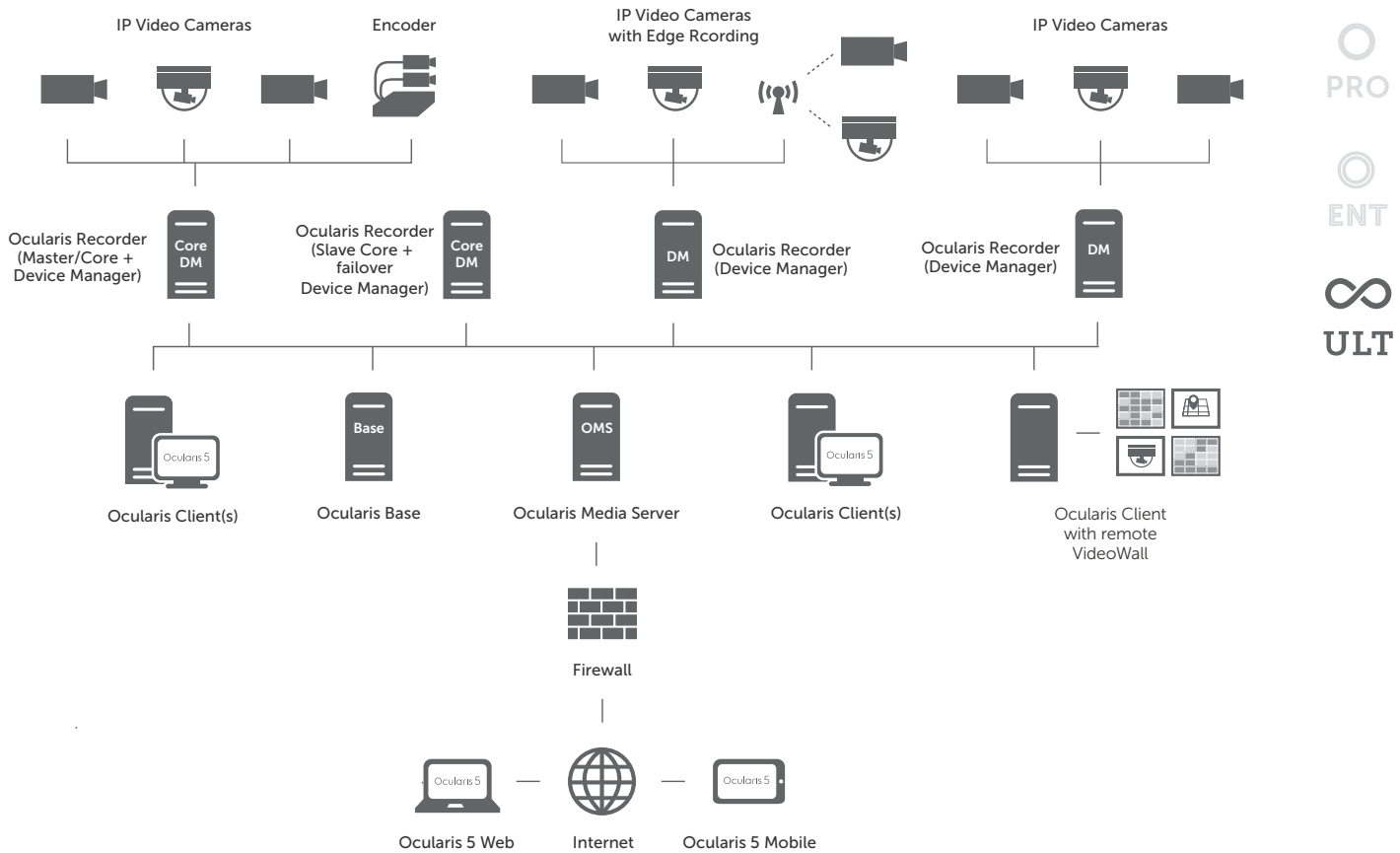
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SYSTEM DIAGRAM

Ocularis 5



* In smaller systems, all Ocularis components may be installed on the same PC/server.

SYSTEM COMPONENTS

OCULARIS CLIENT

Unified operator interface for live monitoring, playback and investigation, alert management, map navigation and local VideoWall control for workstation connected displays.

OCULARIS BASE

Manages the flow of event, user and system status data from the various system components. Provides Active Directory authentication for Client operators.

OCULARIS RECORDER (CORE AND DEVICE MANAGER)

Manages camera connections, recording parameters and video data.

OCULARIS MEDIA SERVER

Enables web and mobile access to video and alerts and also serves as the gateway for M2O™ video from mobile devices.

FEATURE SET COMPARISON

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OCULARIS SYSTEM FEATURE	PROFESSIONAL	ENTERPRISE	ULTIMATE
Number of cameras per system	Unlimited	Unlimited	Unlimited
Number of recorders per system	Unlimited	Unlimited	Unlimited
Number of concurrent client connections	Unlimited	Unlimited	Unlimited
Ocularis Mix & Match - combining multiple recorder types in a single system	Yes	Yes	Yes
Ocularis OpenSight™ option for sharing video between Ocularis systems	Remote	Remote	Main/Remote
Compatible with Ocularis 4.x and prior recorders	Yes	Yes	Yes
Critical Camera Failover for camera failure protection	Yes	Yes	Yes
Centralized user management with color-coded audit logging of user activity	Yes	Yes	Yes
Active Directory support for secure system access	Yes	Yes	Yes
Integration with 3rd-party access control	Yes	Yes	Yes
Integration with 3rd-party video content analytics	No	Yes	Yes
Integration with 3rd-party License Plate Recognition (LPR) systems	Yes	Yes	Yes
Data Link and Network I/O event integration	Yes	Yes	Yes
Event Fusion / Composite Events	Yes	Yes	Yes
Ocularis Web and Mobile Clients included with optional M2O (Mobile-to-Ocularis) video streaming	Yes	Yes	Yes
Event Actions including move-to-PTZ-preset, email, TCP/UDP and HTTP messaging	Yes	Yes	Yes
OCULARIS CLIENT FEATURE			
License-free and unlimited Ocularis Client installations	Yes	Yes	Yes
Multi-level map navigation with live camera previews	Yes	Yes	Yes
Support for 8 independently controlled displays from a single workstation	Yes	Yes	Yes
Touchscreen support with interactive overlay controls	Yes	Yes	Yes
Local VideoWall control of workstation connected displays	Yes	Yes	Yes
Remote VideoWall function for command and control centers	No	Optional	Standard
Dynamic TimeSlicer™ thumbnail search and Kinetic Timeline™ for quick and easy investigations	Yes	Yes	Yes
Create, save, and manage unlimited shared and private views	Yes	Yes	Yes
Full encryption for client-server communications	Yes	Yes	Yes
Secure multi-camera database export with included Viewer (with or without audio)	Yes	Yes	Yes
Snapshot still image export and printed incident report	Yes	Yes	Yes
Single camera AVI export capability (with or without audio)	Yes	Yes	Yes
Case builder with Bookmarking of important video with Case Builder	No	Yes	Yes
Support for USB joysticks for PTZ control	Yes	Yes	Yes
Alert management with support for metadata overlays on maps and video	Yes	Yes	Yes
OCULARIS RECORDER FEATURES			
Number of cameras per server	128	Unlimited	Unlimited
Centralized recorder management	No	Yes	Yes
Fully redundant recorder manager without using clustering	No	Yes	Yes
Automatic recorder patch update service	Yes	Yes	Yes
Automatic failover of recording servers	No	Yes	Yes
Efficient and dynamic data load balancing with no archiving requirements	Yes	Yes	Yes
Video data aging (grooming) for long term storage optimization	No	No	Yes
Automatic edge recording retrieval after network disconnect	No	No	Yes
Automatic scheduled export of video data	Yes	Yes	Yes
Support for H.265, H.264, MPEG-4, MJPEG, and MxMPEG compression formats	Yes	Yes	Yes
Supports camera-based analytics including Axis Dynamic Event Stream	Yes	Yes	Yes
Server-based motion detection and support for camera-based motion detection and analytics	Yes	Yes	Yes
Support for thousands of IP cameras plus ONVIF, ONVIF Profile S, generic RTPSP and MJPEG drivers	Yes	Yes	Yes
Smart Camera Drivers for most major camera manufacturers (See Supported Devices list for complete details)	Yes	Yes	Yes
Supports multi-streaming from cameras for efficient bandwidth utilization	Yes	Yes	Yes
TLS 1.2 and HTTPS (SSL) encryption for camera to recorder communication	Yes	Yes	Yes
Digital input/output device support (number of devices)	5	Unlimited	Unlimited
Simultaneous Standard and Alarm Recording with separate retention policies	Yes	Yes	Yes
Incoming audio recording for supported cameras	Yes	Yes	Yes
Two-way audio support for select cameras and audio only devices	Yes	Yes	Yes
Multicast live view from recorder to Ocularis Client	No	No	Yes
No device registration or device MAC address required	Yes	Yes	Yes

Supported Operating Systems (all 64-bit)

- Microsoft Windows® 7 SP1 (Professional, Ultimate, Enterprise)
- Microsoft Windows® 8.1 (Standard, Professional, Enterprise)
- Microsoft Windows 10 (Updates: Anniversary, Creators, Fall Creators) (Professional, Enterprise)
- Microsoft Windows Server® 2008 R2 SP1 (Standard, Enterprise)
- Microsoft Windows Server® 2012 (Standard, Datacenter)
- Microsoft Windows Server® 2012 R2 (Standard, Datacenter)
- Microsoft Windows Server® 2016 (Standard, Datacenter)

Hardware Recommendations

All Ocularis components may be installed on the same PC/server

Ocularis Base*

- CPU: Intel Core i3 or better
- RAM: 8 GB
- Hard Drive: Minimum 250 GB
- Software: Microsoft .NET 4.6.2 Framework; IIS 6.0 or newer

Ocularis Recorder*

Core + Device Manager (on same server)

(Dependent on the number of cameras being recorded. See [OnSSI Storage and Hardware Calculator](#))

Recommended:

- CPU: Intel Core i7-4930K @ 3.40GHz or Intel Xeon E5-2640 v3 @ 2.60GHz
- RAM: 16 GB
- HDD: 500 GB free disk space @ 7200 RPM for OS and Applications
Additional storage as required for video storage
- Network: Ethernet with 1000 MBit/s. Do not team NIC's except for fault tolerance (Bandwidth aggregation not supported)

Minimum:

- CPU: Intel Core i3 M 370 @ 2.40GHz
- RAM: 8 GB
- HDD: 100 GB free disk space for OS and Applications
Additional storage as required for video storage
- Network: Ethernet with 1000 MBit/s. Do not team NIC's except for fault tolerance (Bandwidth aggregation not supported)

Core Service (stand alone)

Recommended:

- CPU : Intel Core i7-4930K @ 3.40GHz or Intel Xeon E5-2640 v3 @ 2.60GHz
- RAM : 16 GB (< 1000 video channels) , 24 GB (> 1000 video channels)

Ocularis Version 5.6, August 2018

On-Net Surveillance Systems, Inc. (OnSSI) was founded in 2002 with the goal of developing comprehensive and intelligent IP video surveillance management software. OnSSI's Ocularis IP security and surveillance VMS platform increases security, reduces operational costs, and helps organizations move closer to prevention. Ocularis delivers open architecture, flexibility, and scalability for a range of applications including education, gaming, government, healthcare, manufacturing, public safety, transportation, and utilities. OnSSI is headquartered in Pearl River, New York and has representation in over 100 countries. With its acquisition of Germany-based VMS company, SeeTec GmbH and the launch of Ocularis 5, OnSSI continues to drive global expansion and technological innovations.

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- HDD : 500 GB free disk space for OS and Applications
- Network : Ethernet with 1000 MBit/s

Minimum:

- CPU : Intel Core i3 M 370 @ 2.40GHz
- RAM : 8 GB
- HDD : 100 GB free disk space for OS and Applications
- Additional storage as required for video storage
- Network : Ethernet with 1000 MBit/s

Device Manager (stand alone)

Recommended:

- CPU : Intel Core i7-4930K @ 3.40GHz or Intel Xeon E5-2640 v3 @ 2.60GHz
- RAM : 16 GB (<64 camera streams), 32 GB (>64 camera streams)
- HDD : 500 GB free disk space @ 7200 RPM for OS and Applications
- Additional storage as required for video storage
- Network : Dual Ethernet with 1000 MBit/s. Do not team NIC's except for fault tolerance (Bandwidth aggregation not supported)

Minimum:

- CPU : Intel Core i3 M 370 @ 2.40GHz
- RAM : 8 GB
- HDD : 100 GB free disk space for OS and Applications
- Additional storage as required for video storage
- Network : Ethernet with 1000 MBit/s

Ocularis Media Server*

- CPU: Intel® Xeon® E3 Series or Intel® Core™ i5 (or better) recommended
- RAM: Minimum 8 GB (reserve 4GB for Ocularis Media Server if installing with other Ocularis applications)
- Hard Drive: 50GB or more
- Software: Microsoft, .NET 4.0 Framework, .NET 4.6.2 Framework and Internet Information Services (IIS) 6.0 or newer

Ocularis Client

- CPU – Intel Core i5™ or better
- RAM – 8 GB minimum (16 GB or more recommended)
- Software – DirectX 9.0 or newer, Microsoft .NET 4.6.2 Framework
- Graphics Adapter – PCI-Express, minimum 256 MB RAM

* Supported in virtual environments

Please visit the [OnSSI Storage and Hardware Calculator](#) for detailed system requirements or contact Sales Engineering at se@onssi.com.