Ocularis 6.1 SP1 Camera Drivers

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Ocularis Support of IP Cameras and Encoders

Ocularis uses several methods to support a large and growing number of camera and encoder models from most camera manufacturers. The Supported Devices list on the Qognify website is updated on a monthly basis and offers a list of cameras and encoders that have been tested and certified to work with Ocularis. Additional information is provided on the website indicating tested firmware versions, which type of driver is used, and supported device features such as I/O and analytic functions. Find it here: https://www.qognify.com/support-training/supported-devices/

Device License Requirements

Cameras and encoders are licensed in Ocularis by IP address. One device license is required per IP address used. Find the amount of required licenses per device in the Supported Devices list on the Qognify website.

Examples:
- A multi-sensor or multi-stream camera that uses one IP address will only require a single device license – regardless of the number of video channels/streams actually used.
- A 4 or 16 channel encoder using four IP addresses will require four licenses.

Standalone input/output (I/O) modules do not require a license in Ocularis. However, Ocularis Professional has a limitation of five I/O modules per server, while Ocularis Enterprise and Ocularis Ultimate do not have any limitations on the number of modules used.

Static Drivers

Many cameras and encoders are supported via static drivers specifically written to the device model. Many of them are flexible as they will work with a series of cameras that vary only in attributes such as camera type (box/minidome), mounting type, indoor vs. outdoor, lens type, etc. Camera specific drivers are available in the Ocularis Recorder Manager via a drop down menu when adding the device. When using static drivers to add a camera to Ocularis, it is not necessary that the camera is available on the network at the time of configuration.

Smart Drivers

Manufacturer-specific 'Smart Drivers' expand the range of model-specific static drivers. Instead of storing the device's information (codecs, resolutions, frame rates, etc.) statically, Ocularis queries the device for its capabilities. Smart Drivers can be used with any camera or encoder model that meets the specifications in the table below. Configuring a device with a smart driver requires that the camera is available on the network at the time of configuration. Smart Drivers eliminate the need to wait for model-specific drivers and allow new cameras to be used immediately.

Onvif Drivers

ONVIF Drivers can be used for cameras that are not supported via static or smart drivers. The camera needs to support the vendor independent ONVIF standard.

The ONVIF Simple Driver (Legacy) can be used for basic compatibility as it doesn't set any parameters on the camera. It simply authorizes at the camera and performs RTSP streaming. You cannot select the profile to be used. PTZ control is supported.

The ONVIF Profile-S/G driver can be used for any camera which is ONVIF Profile-S compliant. In addition to the functionality of the ONVIF Simple Driver this driver also supports setting parameters and receiving event triggers. Also edge storage is supported via Onvif Profile-G.

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Generic Video Driver (RTSP/Motion-JPEG)

The 'Generic Video Driver' is the simplest camera driver and is limited to video streaming using the Motion-JPEG or RTSP protocols only. RTSP also allows to stream audio. This driver requires entering the streaming URL manually in the configuration for the device. The streaming URL can be requested directly from each camera manufacturer. It is recommended to test the RTSP/Motion-JPEG compatibility with VLC Media Player first.

Generic RTP Driver

The 'Generic RTP Driver' is made to retrieve RTP video over UDP. Use the unicast option to retrieve RTP directly from a device. Use the multicast option to hook up to an RTP multicast video stream on the network.

How to use vendor-specific Smart Drivers and the ONVIF Profile-S/G Driver

- Connect camera to the network
- Add new camera in the Recorder Manager and select the Smart Driver of the manufacturer
- Ocularis queries the capabilities from the device and offers it for configuration
- Once you see the model name and firmware version the camera is ready for configuration
- If you use a PTZ camera please activate PTZ manually in the configuration

Known issues for vendor-specific Smart Drivers and the ONVIF Profile-S/G Driver

- The wizard for adding cameras does not fully support Smart Drivers
- Converting static camera drivers into Smart Drivers may lead to loss of some information
- For multi streaming the same stream from the camera can be selected twice for different streams in Ocularis. Please make sure you use each stream only once. Example: Hikvision Smart Driver: Use 'H.264 Stream 1 (H.264)' for the first stream and use 'H.264 Stream 2 (H.264)' for the second stream or vice versa

FAQ For Vendor Specific Smart Drivers and the ONVIF Profile-S/G Driver

- **Q:** Which camera user acount can I use to operate the camera?
  A: Make sure to use a camera user that has administrative rights. For some camera vendors you have to add a specific ONVIF user.
- **Q:** Is my camera supported by a Smart Driver?
  A: If your camera meets the requirements described in the table it can be used with the Smart Driver. The compatibility should be tested before productive use. Qognify is continuously testing and certifying new camera models for the Smart Drivers. Find a list of supported devices here: https://www.qognify.com/support-training/supported-devices/
- **Q:** How can I see that a camera was queried correctly?
  A: Once you can see the correct model name and firmware version of the device in the configuration the device is correctly queried and can be configured.
- **Q:** Once the capabilities of a camera are queried in which cases will the information be updated?
  A: The device will be queried again if the firmware version of the device was upgraded or you enter a different IP address in order to connect to a different device. You can also query again manually by clicking 'Query device'. This may be necessary if some basic functionality on the device has changed

- o Example 1: For several devices the supported resolutions, frame rates and further capabilities may change if you configure a different capture mode on the device.
  - o Example 2: On some devices a digital input can be changed to a digital output.
  - o Example 3: For some devices the supported resolutions and frame may change if it is switched from NTSC to PAL)
- **Q:** Will firmware versions different from the specified ones work as well?
  A: Firmware versions older than the specified ones may work with restrictions. There is no guarantee that firmware versions newer than the specified ones may work. Adjustments to the driver may be necessary. It is recommended to use the firmware versions suggested on the supported devices website per device.
- **Q:** Will further static drivers be released in future?
  A: For vendors where a Smart Driver exists no further static drivers are planned.
- **Q:** Can I fully pre-configure a Ocularis system in the lab before installation on site?
  A: Yes, for each camera model used on site you need at least one of each for pre-configuration. If a device isn't reachable only limited configuration is possible.
  - o Connect the cameras to the network
  - o Create each driver once in Ocularis
    → Ocularis reads the cameras' capabilities (resolutions, frame rates, I/Os, etc…)
  - o Copy each driver as many times as needed
  - o Example: On site the following cameras are used:
    - 5 x Axis P3255-LVE   → You need one sample in the lab
    - 10x Axis Q6078-E   → You need one sample in the lab
    - 20x Hanwha PNV-A9081R → You need one sample in the lab

CAMERA DRIVERS

Qognify

	ALLNET Smart Driver	Arecont Vision Smart Driver	Axis Smart Driver	Bosch Smart Driver	Canon Smart Driver	Convision Smart Driver	Dahua Smart Driver	Eclipse Smart Driver	Flir Smart Driver	Grundig Smart Driver
Protocol	Native Protocol	Native Protocol	Native VAPIX Version 3	Native RCP+	ONVIF	Native	Native	ONVIF	ONVIF	Native
Camera Generation/Series	ALL-Cam23xx Series	MJPEG/H.264 Generation (except Contera)	H.264/H.265 Generation	CPP platforms 4, 5, 6, 7, 7.3, 13, 14	H.264 generation VB-H/VB-M/VB-S	CC-7xxx Series	Not Specified	Not Specified	F-Series, PT-Series, FC Series	Not Specified
Firmware Versions	V5.3.0 or higher	Not Specified	5.x - 10.x 1.x (A series)	6.30 or higher	Not specified	V5.3.5 or higher	Not specified	Not specified	Not specified	V1.0.0 or higher
Basic/Digest Authentication	✔ / ✔	✔ / x	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔
Video Streams — MJPEG	5	8	3	1	1	5	3	3	2	5
Video Streams — H.264	5	8	3	3	2	5	3	3	2	5
Video Streams — H.265	5	x	3	3	x	5	3	3	x	5
Video Streams — Concurrent	5	8	6	3	2	5	3	3	2	5
H.264 Baseline/Main/High Profile	✔ / ✔ / ✔	✔ / x / x	✔ / ✔ / ✔	x / ✔ / x	✔ / x / x	✔ / ✔ / ✔	✔ / ✔ / ✔	✔ / ✔ / ✔	x / x / x	✔ / ✔ / ✔
Transmission Modes (MJPEG/H.26x) — UDP [1]	✔ / ✔	x / ✔	x / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔
Transmission Modes — TCP [2]	✔ / ✔	x / ✔	x / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔
Transmission Modes — HTTP(S) [3]	✔ / ✔	x / x	x / ✔	✔ / ✔	x / x	✔ / ✔	x / x	x / x	x / x	✔ / ✔
Transmission Modes — Multicast [4]	x / x	x / ✔	x / ✔	✔ / ✔	x / x	x / x	✔ / ✔	✔ / ✔	x / x	x / x
MJPEG via HTTP_Serverpush	x	✔	✔	x	x	x	x	x	x	x
Image Rotation — 0°/180°	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Image Rotation — 90°/270°	✔	✔	✔	✔	x	✔	✔	✔	x	✔
Audio-In (listen) / Out (speak)	✔ / ✔	✔ / x	✔ / ✔	✔ / ✔	✔ / x	✔ / ✔	✔ / ✔	✔ / x	x / x	✔ / ✔
Multi channel device support	✔	✔	✔	✔	x	x	✔	✔	✔	x
Set Streaming Parameters	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Virtual Cameras (cropping)	x	✔	✔	x	x	x	x	x	x	x
PTZ — Continuous	✔	x	✔	✔	✔	✔	✔	✔	✔	✔
PTZ — ClickToCenter	✔	x	✔	✔	x	✔	✔	x	x	✔
PTZ — Area Zoom	✔	x	✔	✔	x	✔	✔	x	x	✔
PTZ — Presets	✔	x	✔	✔	✔	✔	✔	✔	✔	✔
PTZ — Day/Night	x	x	✔	✔	✔	x	✔	✔	x	x
PTZ — Focus	✔	x	✔	✔	✔	✔	✔	✔	x	✔
PTZ — Iris	✔	x	✔	✔	x	✔	✔	x	x	✔
Event Triggers [5]	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
HTTPS/TLS	✔	x	✔	✔	✔	✔	✔	✔	✔	✔
Digital Inputs/Outputs	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ [6] / ✔	✔ / ✔	✔ / ✔	✔ [6] / ✔	✔ [6] / ✔	✔ / ✔
Edge Storage	✔	x	✔	✔	x	✔	x	✔	x	✔
Change device password	x	x	✔	✔	x	x	x	x	x	x
General Information		Event Triggers: Motion Detection only	Any ACAP event trigger supported incl. VMD, Perimeter Defender,		Motion Detection and 2nd H.264 stream has to be configured manually on the camera before query. 'Check Time on Authentication' needs to be disabled on the device.		If a device has different capabilities (resolutions, fps, etc.) per channel only the capabilities of channel #1 are offered. Set streaming parameters for channels >1 on the device manually.		Digital Outputs are virtual Outputs that can be mapped to actions on the device.	

[1] RTP_Over_UDP_Unicast | [2] RTP_Over_RTSP_Over_TCP | [3] RTP_Over_RTSP_Over_HTTP_unicast | [4] RTP_Over_UDP_Multicast

[5] A List of supported event triggers is queried from the device (incl. analytics triggers) | [6] Only one digital input supported

CAMERA DRIVERS

	Hanwha Techwin Wisenet Smart Driver	Hikvision Smart Driver	Interlogix Smart Driver	Northern Smart Driver	Panasonic Smart Driver	Sony Smart Driver Generation 6/7	Sony Smart Driver Generation X	TKH Security Solutions Smart Driver	Uniview Smart Driver	Vanderbilt Smart Driver
Protocol	Native Sunapi 2.0	Native ISAPI / CGI	Native Protocol	Native Protocol	Native CGI	Native	Native	Native	ONVIF	Native
Camera Generation/Series	WiseNet Devices	Not Specified	Not Specified	NTH-IP3 Series	H.264, H.265 Generation	Generation 6, 7	Generation X	10xx/11xx Series	Not Specified	Eventys Series
Firmware Versions	1.00 or higher	5.3.5 or higher	Not Specified	5.3.5 or higher	1.00 or higher	Gen 6: 2.x - 3.x Gen7: 1.x	6.40 or higher	V1.0.0 or higher	Not specified	Not specified
Basic/Digest Authentication	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓
Video Streams — MJPEG	2	5	5	5	1	2	1	5	3	5
Video Streams — H.264	3	5	5	5	2	2	2	5	3	5
Video Streams — H.265	3	5	5	5	2	x	2	5	3	5
Video Streams — Concurrent	3	5	5	5	3	2	3	5	3	5
H.264 Baseline/Main/High Profile	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓	x / ✓ / x	✓ / ✓ / ✓	✓ / ✓ / ✓	✓ / ✓ / ✓
Transmission Modes (MJPEG/H.26x) — UDP [1]	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	x / ✓	x / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓
Transmission Modes — TCP [2]	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	x / ✓	x / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓
Transmission Modes — HTTP(S) [3]	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	x / ✓	x / ✓	✓ / ✓	✓ / ✓	x / ✓	✓ / ✓
Transmission Modes — Multicast [4]	x / x	x / x	x / x	x / x	x / x	x / ✓	✓ / ✓	x / x	✓ / ✓	x / x
MJPEG via HTTP_Serverpush	x	x	x	x	✓	✓	x	x	x	x
Image Rotation — 0°/180°	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Image Rotation — 90°/270°	✓	✓	✓	✓	✓	x	✓	✓	✓	✓
Audio-In (listen) / Out (speak)	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / x	✓ / ✓	✓ / ✓	✓ / ✓	✓ / x	✓ / ✓
Multi channel device support	✓	✓	✓	x	✓	x	✓	x	✓	✓
Set Streaming Parameters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Virtual Cameras (cropping)	x	x	x	x	x	x	x	x	x	x
PTZ — Continuous	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PTZ — ClickToCenter	✓	✓	✓	✓	✓	✓	✓	✓	x	✓
PTZ — Area Zoom	✓	✓	✓	✓	✓	✓	✓	✓	x	✓
PTZ — Presets	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PTZ — Day/Night	✓	x	x	x	✓	✓	✓	x	✓	x
PTZ — Focus	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PTZ — Iris	✓	✓	✓	✓	✓	✓	✓	✓	x	✓
Event Triggers [5]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
HTTPS/TLS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Digital Inputs/Outputs	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ / ✓	✓ [6] / ✓	✓ / ✓
Edge Storage	✓	✓	✓	✓	x	x	✓	✓	✓	✓
Change device password	✓	x	x	x	x	x	✓	x	x	x
General Information					Event Triggers including VMD, i-VMD and AI-VMD	Transmission mode Multicast only available for Gen. 7 devices				

[1] RTP_Over_UDP_Unicast | [2] RTP_Over_RTSP_Over_TCP | [3] RTP_Over_RTSP_Over_HTTP_unicast | [4] RTP_Over_UDP_Multicast

[5] A List of supported event triggers is queried from the device (incl. analytics triggers) | [6] Only one digital input supported

	Vivotek Smart Driver	W Box Smart Driver	Onvif Profile-S/G Driver	Onvif Simple Driver (Legacy)	Generic Video Driver (RTSP)	Generic Video Driver (Motion-JPEG)	Generic RTP Driver
Protocol	Native WebAPI	Native Protocol	ONVIF	ONVIF	RTP/RTSP	Motion-JPEG	RTP
Camera Generation/Series	H.264, H.265 Generation	Not Specified	Profile-S compliant devices	Not Specified	Not Specified	Not Specified	Not Specified
Firmware Versions	Not specified	5.3.x or higher	Not Specified	Not Specified	Not Specified	Not Specified	Not Specified
Basic/Digest Authentication	✔ / ✔	✔ / ✔	✔ / ✔	✔ / x	✔ / ✔	✔ / ✔	x / x
Video Streams MJPEG	4	5	10	2	4	4	1
H.264	4	5	10	2	4	x	1
H.265	4	5	10	x	4	x	1
Concurrent	4	5	10	2	4	4	1
H.264 Baseline/Main/High Profile	✔ / ✔ / ✔	✔ / ✔ / ✔	✔ / ✔ / ✔	✔ / ✔ / ✔	✔ / ✔ / ✔	x / x / x	✔ / ✔ / ✔
Transmission Modes (MJPEG/H.26x) UDP [1]	x / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	x / x	✔ / ✔
TCP [2]	x / ✔	✔ / ✔	✔ / ✔	✔ / ✔	✔ / ✔	x / x	x / x
HTTP(S) [3]	x / ✔	✔ / ✔	✔ / ✔	x / ✔	✔ / ✔	x / x	x / x
Multicast [4]	x / x	x / x	✔ / ✔	x / x	x / x	x / x	✔ / ✔
MJPEG via HTTP_Serverpush	✔	x	x	x	x	✔	x
Image Rotation 0°/180°	✔	✔	✔	✔	✔	✔	x
90°/270°	✔	✔	✔	x	x	x	x
Audio-In (listen) / Out (speak)	✔ / ✔	✔ / ✔	✔ / ✔	x / x	✔ / x	x / x	x / x
Multi channel device support	✔	x	✔	x	x	x	x
Set Streaming Parameters	✔	✔	✔	x	x	x	x
Virtual Cameras (cropping)	x	x	x	x	x	x	x
PTZ Continuous	✔	✔	✔	✔	x	x	x
ClickToCenter	✔	✔	✔	x	x	x	x
Area Zoom	✔	✔	x	x	x	x	x
Presets	✔	✔	✔	✔	x	x	x
Day/Night	✔	x	✔	x	x	x	x
Focus	✔	✔	✔	x	x	x	x
Iris	x	✔	x	x	x	x	x
Event Triggers [5]	✔	✔	✔	x	x	x	x
HTTPS/TLS	✔	✔	✔	x	x	x	x
Digital Inputs/Outputs	✔ / ✔	✔ / ✔	✔ [6] / ✔	x / x	x / x	x / x	x / x
Edge Storage	x	✔	✔	x	x	x	x
Change device password	x	x	✔	x	x	x	x
General Information				Stream configuration has to be set on the camera. The stream from the camera cannot be chosen. It is assigned internally. Please use the Onvif Profile-S Driver preferred.	RTSP streaming URL has to be entered manually. Stream configuration (resolution, frame rate etc.) has to be set on the device. Some devices allow setting the streaming parameters in the streaming URL	Motion-JPEG URL has to be entered manually. Stream configuration (resolution, frame rate etc.) has to be set on the camera.	Multicast address and port have to be entered manually. Selected codec has to match the codec configured on the device.

[1] RTP_Over_UDP_Unicast | [2] RTP_Over_RTSP_Over_TCP | [3] RTP_Over_RTSP_Over_HTTP_unicast | [4] RTP_Over_UDP_Multicast

[5] A List of supported event triggers is queried from the device (incl. analytics triggers) | [6] Only one digital input supported