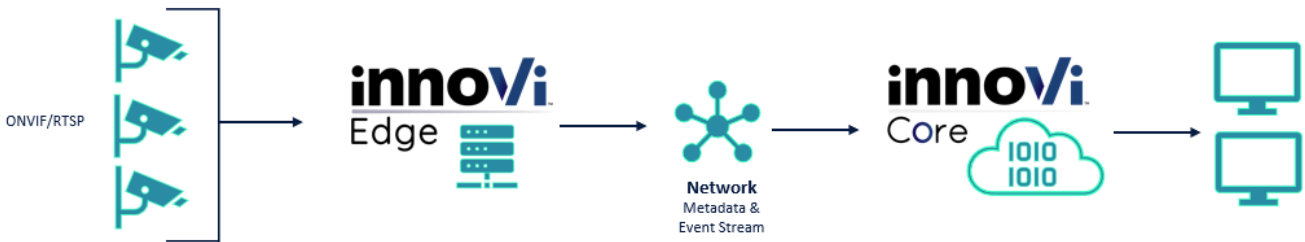


innovi Edge CI (Customer Installed) Data Sheet (Ver. 10-Mar-2022)

innovi Edge CI enables innovi software deployment on a customer's own hardware to connect ONVIF / RTSP fixed IP cameras from the camera's network to a centralized innovi Core. One or multiple innovi Edge Devices (innovi Edge CI, innovi Edge 320/325, or a mix of both) process the video stream, transforming it into Agent Vi's proprietary metadata and sending it to an innovi Core, which will then perform all central management and advanced analysis. See [Note 1](#) for innovi Virtual Edge.



See [Note 2](#) regarding hardware requirements provided in this data sheet.

Operating System

- **Ubuntu 20.04, LTS 64-bit, server edition with no GUI installed**

Choose the Processor

The number of cameras supported by a given Edge Device depends on the following factors:

- Hardware specifications
- Video streaming profile
- Scene activity level (see [Appendix A](#) for scene activity level examples)

The following table summarizes **estimated number of supported cameras per physical core**, for servers with the following Intel® processors:

- 2nd Generation Intel® Xeon® Scalable Processor (Cascade Lake)
- 3rd Generation Intel® Xeon® Scalable processor (Ice Lake)

Selection of any alternate model should be approved by Agent Vi.

Video Streaming profile	Scene Activity Level		
	Low	Medium	High
H.264 @ 720P @ 8 FPS	3.0	2.0	1.6
H.264 @ 1080P @ 15 FPS	1.5	1.3	1.1
H.264 @ 1080P @ 30 FPS	1.2	1.1	1.0
H.265 @ 720P @ 8 FPS	2.5	1.9	1.6
H.265 @ 1080P @ 15 FPS	1.2	1.1	1.0
H.265 @ 1080P @ 30 FPS	1.1	0.9	0.8

Choose the Memory

Memory **per processor** (for optimal performance see [Note 3](#)):

- For Intel® Xeon® Cascade Lake processors: 6 x 16GB RDIMM, DDR4-2933MT/s, Dual Rank
- For Intel® Xeon® Ice Lake processors: 8 x 16GB RDIMM, DDR4-3200MT/s, Dual Rank
- For other processor generations, follow Intel® guidance to achieve high computational performance

Choose the Storage

Operating System & application: 128 GB

For innoVi Remote Guarding: 2 GB per camera

For innoVi Enterprise or innoVi Investigation:

For viewing investigation results, two options are available in the Camera Settings/Full frame recording field:

1. **Full frame recording Enabled:** an internal storage is used for video recording. Video clips of investigation results are played in the innoVi Portal at 720p, 1 FPS
2. **Full frame recording Disabled:** low resolution image crops of the detected object are displayed in the investigation results. Video clips are not available

Requirement	Full frame recording	
	Enabled	Disabled
Storage per camera (GB/Day)	16	7
Write IOPS per camera (count)	20	12
Write Throughput per camera (MBytes/sec)	0.6	0.35

Example (Full frame recording Enabled, for 10 cameras):

- Storage: 1 week of storage requires 10 cameras * 7 days * 16 GB/Day = 1,120 GB
- Write performance:
 - Write IOPS: 10 cameras * 20 IOPS = 200 IOPS
 - Write Throughput: 10 cameras * 0.6 MB/s = 6 MBytes/sec

Other Considerations

- innoVi Edge CI can be deployed on VM. The supported camera count may be reduced
- The innoVi Edge CI server should not host other non-innoVi applications
- Cameras connected to innoVi Edge CI must have static IP addresses (dynamic IP allocation may result in camera disconnections)

Networking Requirements from innoVi Edge to innoVi Core

Average Required bandwidth per camera:

- 5 kbps upload
- 0.5 kbps download

Additional upload bandwidth:

- Real-Time Event Detections: ~500 KB per event
- Live View in innoVi GUI: ~300 Kbps per camera

Maximum allowed latency from the innoVi Edge to the innoVi core:

- 2,000 milliseconds

Supported Camera Characteristics

- Resolution: up to 4K
For HW specification supporting 4K cameras contact presales.innovi@iricity.com
- Frame Rate: 8 FPS is the minimal supported frame rate
- Video resolution width should be divisible by 4
- Maximum allowed aspect ratio is 4:1

Note 1: The innoVi Virtual Edge requires the same hardware specifications as the innoVi Edge CI, however, it is applicable only for Customer Hosted deployments. The server/s of the innoVi Virtual Edge are installed together with the innoVi Core under the same Kubernetes cluster.

Note 2: The hardware requirements are provided for budgetary and planning purposes. They are based on the most common feature mixes, using typical customer usages scenarios which may vary from customer to customer. Internal Agent Vi testing was made with hardware available at the time of testing. Performance is not completely linear at higher CPU core counts. The innoVi Edge software is based on Intel® OpenVINO™ platform, optimized to use acceleration features that are specific to certain processor models. This platform eliminates the need of utilizing an external GPU. Running the software on processors without the correct acceleration features can significantly reduce the number of supported cameras. Given that hardware and software change frequently, Agent Vi recommends that customers request a formal review and hardware specification for their project before purchasing any hardware. For project-specific hardware requirements, please contact presales.innovi@iricity.com. Agent Vi reserves the right to change the product specification at its sole discretion at any time.

Note 3: Additional information related to the effects of memory bank configuration for Intel® Xeon® processors can be found in these articles:

- https://downloads.dell.com/manuals/common/balancing_memory_xeon_2nd_gen.pdf
- <https://www.delltechnologies.com/asset/en-us/products/servers/industry-market/whitepaper-memory-population-rules-for-3rd-generation-intel-xeon-scalable-processors-on-powered-edge-servers.pdf>

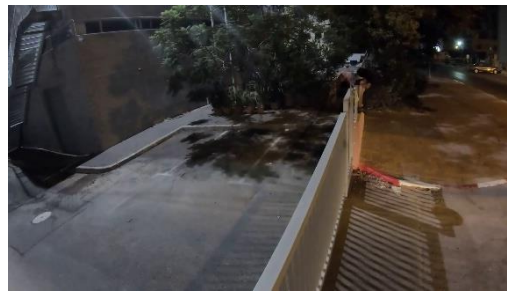
Appendix A: Scene Activity Level - Examples

Scene activity refers to the number of objects in a frame, as measured over time. It is defined in the following levels: **Low**, **Medium**, and **High**. The following screenshots and related short video clips show two examples per each level:

Low



<https://tinyurl.com/ycteneyp>



<https://tinyurl.com/y7m9qlv2>

Medium



<https://tinyurl.com/y8rno5eh>



<https://tinyurl.com/yaaawaa4>

High



<https://tinyurl.com/y7mdmahr>



<https://tinyurl.com/yda99a2y>

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