O IN2IT live

Technical specifications

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1. System and network requirements

IN2IT live solution is available in two variants:
- Pre-configured hardware appliances for 4 or 8 SDI/NDI/Stream channels
- Software only edition, limited to NDI and Stream recordings

2. Hardware appliance characteristics

IN2IT live appliance for 4 channels recording
- Form factor: 1 RU, rack rails included
- 32GB RAM
- 1 x CPU Intel® Xeon® Gold 6230 2,1GHz 20 cores
- 2 x SSD 480 GB RAID 1 for system
- 6 x HDD 600 GB 15K RPM SAS RAID 5 for data
- Dual Power supply 750W 240V 50Hz
- Intel®Ethernet i350 QP 2 x 1Gb Server Adapter (Avid qualified)
- Intel X550 Dual Port 2 x 10G Base-T Adapter (Avid qualified)
- Windows Server 2019 Standard

Media I/O characteristics
- 4x SDI I/O mini BNC
- 16-channel 48 kHz SDI embedded audio I/O per SDI input
- Analog Color Black or HD Tri-Level Sync
- LTC/Reference input
- RS-422 port

The appliance is capable of recording 4 HD streams + 1 proxy file per stream.
The appliance is capable of recording 1 UHD streams + 1 proxy file per stream.

IN2IT live appliance for 8 channels recording
- Form factor: 2 RU, rack rails included
- 32GB RAM
- 2 x CPU Intel® Xeon® Gold 6230 2,1GHz 20 cores
- 2 x SSD 480 GB RAID 1 for system
- 6 x HDD 600 GB 15K RPM SAS RAID 5 for data
- Dual Power supply 750W 240V 50Hz
- Intel®Ethernet i350 QP 2 x 1Gb Server Adapter (Avid qualified)
- Intel X550 Dual Port 2 x 10G Base-T Adapter (Avid qualified)
- Windows Server 2019 Standard

Media I/O characteristics
- 8x SDI I/O mini BNC
- 16-channel 48 kHz SDI embedded audio I/O per SDI input
- Analog Color Black or HD Tri-Level Sync
- LTC/Reference input
- RS-422 port

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3. Hardware and OS requirements for software only variant

For IN2IT live software only, we recommend the following configuration:

Integration with Avid storage requires a qualified Avid network card.
Please refer to Avid documentation regarding qualified network cards for your system.

- 32GB RAM
- 1 or 2 x CPU Intel® Xeon® Gold 6132 2,6GHz 14 cores*
- 2 x SSD 480 GB RAID 1 for system
- 2 x HDD 900 GB 15K RPM SAS RAID 1 for data
- Dual Power supply
- Intel®Ethernet i350 QP 1Gb Server Adapter (Avid qualified)
- or Intel X540 Dual Port 10G Base-T Adapter (Avid qualified)
- Windows Server 2016 or 2019 Standard

1 CPU is sufficient to record 4 HD or 1 UHD channels and create a proxy file for each channel. 2 CPUs are required to record 8 HD or 2 UHD channels and create a proxy file for each channel.

Virtualization of IN2IT live

Virtual machines are supported for IN2IT live. We recommend the following configuration:

- 1GbE connection per Woody VM
- 10Gb storage connection on hosts
- 3vCPUs minimum per recording channel
- 32GB RAM

4. System and network requirements

System configuration
- Supported operating systems: Windows Server 2016 / Windows Server 2019 / Windows 10
- Google Chrome is recommended to access Woody user interfaces

Network requirements
- The network port usage for IN2IT live 3.3 can be found at the end of this document
- Antivirus scan should exclude the following folders and the executables present in them:
  C:\Program Files\Woody Technologies
  C:\Program Files\Libero Systems

Requirements for Avid integration
- Avid Interplay Web Services port: depending on your Avid configuration.
- Avid ISIS/NEXIS ports usage: Please refer to Avid documentation.

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- Avid ISIS: v 1.4 and higher – Avid NEXIS is supported.
- Interplay: from v 3.1 / Interplay WebServices: from v 3.5.
- Pro Tools: 12.8 and higher. For version before 12.8, please use IN2IT live 3.0)
- The Interplay user configured in the application must have rights to read and write in Interplay source and destination folders.
- Install the ISIS/Nexis client on the same server as Woody. The workstation or server must have read and write access onto the source and destination workspaces.
- The Woody server must have access to Avid Interplay WebServices and to the production storage.
- Interplay WebServices can optionally be installed on the same server than Woody software. For more information about Interplay WebServices installation, please refer to the Avid documentation

5. Supported source formats

The following sources are supported in IN2IT live:
- SDI, HD-SDI
- SRT (Secure Reliable Transport)
- NewTek NDI® (Network Device Interface)
- Web streams, including UDP/RTP/RTSP/RTMP/HLS/MPEG-DASH
- Youtube Live

Ingest ports are configured by default for SDI, NDI or IP support, but this configuration can be changed later on.

6. Router control

IN2IT live allows router control through the integration with **Rascular RouteMaster**, a generic solution to integrate with multiple router control protocols.

Thanks to this integration, IN2IT live users can select a router source for each SDI recording job.
A default router source can be configured for each recording channel, making easier to work with recurring sources.
RouteMaster can control routers using the following common protocols.

- Blackmagic Videohub
- Evertz/Quartz Type 1
- GVG Jupiter ASCII
- GVG Native
- Harris LRC
- Harris/Leitch Passthru
- Kramer 2000 and 3000
- NewTek NDI™
- NVision NV9000
- NVision Compact Router
- Nevion Sublime MRP
- Nevion Compact NCB
- PESA P1N
- Pro-Bel SW-P-02
- Pro-Bel SW-P-08
- Sierra Aspen
- Utah Scientific RCP3

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7. Supported ingest modes and delivery protocols

The following ingest modes and delivery protocols are supported in IN2IT live

Ingest modes:
- Avid Interplay
- Avid MediaFiles + AAF
- A/V File + Metadata
- Grass Valley Stratus SCS
- Cantemo Portal
- Multitarget

Delivery protocols:
- FTP
- SFTP
- FTPS
- SMB
- Aspera FASP
- FileCatalyst
- Signiant
- Azure storage
- Amazon S3

For delivery protocols other than SMB, the transfer happens after the recording is complete.

8. Supported target formats

A. SD PAL and HD 25/50 fps

Ingest mode	Avid Modes	Other modes
AVC-Intra 100 (1080i/50)	✔	✔
AVC-Intra 100 (1080p/25)	✔	✔
AVC-Intra 100 (720p/25), (720p/50)	✔	✔
AVC-Intra 50 (1080i/50)	✔	✔
AVC-Intra 50 (1080p/25)	✔	✔
AVC-Intra 50 (720p/25), (720p/50)	✔	✔
DNxHD 120 (1080i/50), (1080p/25), (720p/50)	✔	✔
DNxHD 185 (1080i/50), (1080p/25)	✔	✔
DNxHD 185x (1080i/50)	✔	✔
DNxHD 185x (1080p/25)	✔	
DNxHD 240 (1080p/50)	✔	✔
DNxHD 36 (1080p/25)	✔	✔
DNxHD 365 (1080p/50)	✔	✔
DNxHD 365x (1080p/50)	✔	✔
DNxHD 60 (720p/25)	✔	✔
DNxHD 75 (1080p/50)	✔	✔
DNxHD 90 (720p/25)	✔	✔
DNxHD 90x (720p/25)	✔	✔
DV 25 411 i (PAL)	✔	✔
DV 25 411 p (PAL)	✔	
DV 25 420 i (PAL)	✔	✔
DV 25 420 p (PAL)	✔	
DV 50 i (PAL)	✔	✔
DV 50 p (PAL)	✔	
DVCPro HD (1080i/50)	✔	
DVCPro HD (720p/50)	✔	
MPEG 30 i (PAL)	✔	✔
MPEG 40 i (PAL)	✔	✔
MPEG 50 i (PAL)	✔	✔
XDCAM EX 35Mbits (1080i/50)	✔	✔
XDCAM EX 35Mbits (1080p/25)	✔	✔
XDCAM EX 35Mbits (720p/50)	✔	✔
XDCAM EX 35Mbits (720p/25)	✔	✔
XDCAM HD 50Mbits (1080i/50)	✔	✔
XDCAM HD 50Mbits (1080p/25)	✔	✔
XDCAM HD 50Mbits (720p/50)	✔	✔
XDCAM HD 50Mbits (720p/25)		✔
Custom presets *		✔

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B. SD NTSC and HD 23.976/29.97/59.94 fps

Ingest mode	Avid Modes	Other modes
AVC-Intra 100 (1080i/59.94)	✔	✔
AVC-Intra 100 (1080p/23.976), (1080p/29.97)	✔	✔
AVC-Intra 100 (720p/23.976), (720p/29.97), (720p/59.94)	✔	✔
AVC-Intra 50 (1080i/59.94)	✔	✔
AVC-Intra 50 (1080p/23.976), (1080p/29.97)	✔	✔
AVC-Intra 50 (720p/23.976), (720p/29.97), (720p/59.94)	✔	✔
DNxHD 110 (720p/29.97)	✔	✔
DNxHD 115 (1080p/23.976)	✔	✔
DNxHD 145 (1080i/59.94), (1080p/29.97), (720p/59.94)	✔	✔
DNxHD 175 (1080p/23.976)	✔	✔
DNxHD 175x (1080p/23.976)	✔	✔
DNxHD 220 (1080i/59.94), (1080p/29.97), (720p/59.94)	✔	✔
DNxHD 220x (1080i/59.94), (1080p/29.97), (720p/59.94)	✔	✔
DNxHD 290 (1080p/59.94)	✔	✔
DNxHD 36 (1080p/23.976)	✔	✔
DNxHD 440 (1080p/59.94)	✔	✔
DNxHD 440x (1080p/59.94)	✔	✔
DNxHD 60 (720p/23.976)	✔	✔
DNxHD 75 (720p/29.97)	✔	✔
DNxHD 90 (1080p/59.94), (720p/23.976)	✔	✔
DNxHD 90x (720p/23.976)	✔	✔
DV 25 411 i(NTSC) 29.97	✔	✔
DV 50 i(NTSC) 29.97	✔	✔
MPEG 30 i (NTSC)	✔	✔
MPEG 30 i (NTSC)	✔	✔
MPEG 30 i (NTSC)	✔	✔
DVCPro HD (1080i/59.97)	✔	
DVCPro HD (720p/59.94)	✔	
XDCAM EX 35Mbits (1080i/59.94), (1080p/23.976), (1080p/29.97)	✔	✔
XDCAM EX 35Mbits (720p/23.976), (720p/29.94)	✔	✔
XDCAM HD 50Mbits (1080i/59.94), (1080p/23.976), (1080p/29.97)	✔	✔
XDCAM HD 50Mbits (720p/59.94)	✔	✔
XAVC Intra 100 (1080i/50)	✔	
XAVC Intra 100 (1080i/59.94)	✔	
XAVC Intra 100 (1080p/23.976)	✔	
XAVC Intra 100 (1080p/25)	✔	
XAVC Intra 100 (1080p/29.97)	✔	
Custom presets *		✔

*   In A/V File + Metadata mode, the administrator can creates its own preset based on MXF Op1a, MOV and MP4 containers.

Avid audio target formats : Supported audio target formats for Avid modes are PCM 16 or 24 bits at 44100 or 48000 Hz

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C. **4K PAL 25/50 fps**

Ingest mode	Avid Modes	Other modes
DNxHR 444 10bits (1920x1080p/25)	✔	
DNxHR 444 10bits (1920x1080p/50)	✔	
DNxHR 444 10bits (2048x1080p/25)	✔	
DNxHR 444 10bits (2048x1080p/50)	✔	
DNxHR 444 10bits (3840x2160p/25)	✔	
DNxHR 444 10bits (3840x2160p/50)	✔	
DNxHR 444 10bits (4096x2160p/25)	✔	
DNxHR 444 10bits (4096x2160p/50)	✔	
DNxHR HQ (1920x1080p/25)	✔	
DNxHR HQ (1920x1080p/50)	✔	
DNxHR HQ (2048x1080p/25)	✔	
DNxHR HQ (2048x1080p/50)	✔	
DNxHR HQ (3840x2160p/25)	✔	
DNxHR HQ (3840x2160p/50)	✔	
DNxHR HQ (4096x2160p/25)	✔	
DNxHR HQ (4096x2160p/50)	✔	
DNxHR HQX 10bits (1920x1080p/25)	✔	
DNxHR HQX 10bits (1920x1080p/50)	✔	
DNxHR HQX 10bits (2048x1080p/25)	✔	
DNxHR HQX 10bits (2048x1080p/50)	✔	
DNxHR HQX 10bits (3840x2160p/25)	✔	
DNxHR HQX 10bits (3840x2160p/50)	✔	
DNxHR HQX 10bits (4096x2160p/25)	✔	
DNxHR HQX 10bits (4096x2160p/50)	✔	
DNxHR LB (1920x1080p/25)	✔	
DNxHR LB (1920x1080p/50)	✔	
DNxHR LB (2048x1080p/25)	✔	
DNxHR LB (2048x1080p/50)	✔	
DNxHR LB (3840x2160p/25)	✔	
DNxHR LB (3840x2160p/50)	✔	
DNxHR LB (4096x2160p/25)	✔	
DNxHR LB (4096x2160p/50)	✔	
DNxHR SQ (1920x1080p/25)	✔	
DNxHR SQ (1920x1080p/50)	✔	
DNxHR SQ (2048x1080p/25)	✔	
DNxHR SQ (2048x1080p/50)	✔	
DNxHR SQ (3840x2160p/25)	✔	
DNxHR SQ (3840x2160p/50)	✔	
DNxHR SQ (4096x2160p/25)	✔	
DNxHR SQ (4096x2160p/50)	✔	

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D. 4K NTSC 23.976/29.94/59.94 fps

Ingest mode	Avid Modes	Other modes
DNxHR 444 10bits (1920x1080p/23.976)	✔	
DNxHR 444 10bits (1920x1080p/29.97)	✔	
DNxHR 444 10bits (1920x1080p/59.94)	✔	
DNxHR 444 10bits (2048x1080p/23.976)	✔	
DNxHR 444 10bits (2048x1080p/29.97)	✔	
DNxHR 444 10bits (2048x1080p/59.94)	✔	
DNxHR 444 10bits (3840x2160p/23.976)	✔	
DNxHR 444 10bits (3840x2160p/29.97)	✔	
DNxHR 444 10bits (3840x2160p/59.94)	✔	
DNxHR 444 10bits (4096x2160p/23.976)	✔	
DNxHR 444 10bits (4096x2160p/29.97)	✔	
DNxHR 444 10bits (4096x2160p/59.94)	✔	
DNxHR HQ (1920x1080p/23.976)	✔	
DNxHR HQ (1920x1080p/29.97)	✔	
DNxHR HQ (1920x1080p/59.94)	✔	
DNxHR HQ (2048x1080p/23.976)	✔	
DNxHR HQ (2048x1080p/29.97)	✔	
DNxHR HQ (2048x1080p/59.94)	✔	
DNxHR HQ (3840x2160p/23.976)	✔	
DNxHR HQ (3840x2160p/29.97)	✔	
DNxHR HQ (3840x2160p/59.94)	✔	
DNxHR HQ (4096x2160p/23.976)	✔	
DNxHR HQ (4096x2160p/29.97)	✔	
DNxHR HQ (4096x2160p/59.94)	✔	
DNxHR HQX 10bits (1920x1080p/23.976)	✔	
DNxHR HQX 10bits (1920x1080p/29.97)	✔	
DNxHR HQX 10bits (1920x1080p/59.94)	✔	
DNxHR HQX 10bits (2048x1080p/23.976)	✔	
DNxHR HQX 10bits (2048x1080p/29.97)	✔	
DNxHR HQX 10bits (2048x1080p/59.94)	✔	
DNxHR HQX 10bits (3840x2160p/23.976)	✔	
DNxHR HQX 10bits (3840x2160p/29.97)	✔	
DNxHR HQX 10bits (3840x2160p/59.94)	✔	
DNxHR HQX 10bits (4096x2160p/23.976)	✔	
DNxHR HQX 10bits (4096x2160p/29.97)	✔	
DNxHR HQX 10bits (4096x2160p/59.94)	✔	
DNxHR LB (1920x1080p/23.976)	✔	
DNxHR LB (1920x1080p/29.97)	✔	
DNxHR LB (1920x1080p/59.94)	✔	
DNxHR LB (2048x1080p/23.976)	✔	
DNxHR LB (2048x1080p/29.97)	✔	
DNxHR LB (2048x1080p/59.94)	✔	
DNxHR LB (3840x2160p/23.976)	✔	
DNxHR LB (3840x2160p/29.97)	✔	
DNxHR LB (3840x2160p/59.94)	✔	

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	Avid Modes	Other modes
DNxHR LB (4096x2160p/23.976)	✔	
DNxHR LB (4096x2160p/29.97)	✔	
DNxHR LB (4096x2160p/59.94)	✔	
DNxHR SQ (1920x1080p/23.976)	✔	
DNxHR SQ (1920x1080p/29.97)	✔	
DNxHR SQ (1920x1080p/59.94)	✔	
DNxHR SQ (2048x1080p/23.976)	✔	
DNxHR SQ (2048x1080p/29.97)	✔	
DNxHR SQ (2048x1080p/59.94)	✔	
DNxHR SQ (3840x2160p/23.976)	✔	
DNxHR SQ (3840x2160p/29.97)	✔	
DNxHR SQ (3840x2160p/59.94)	✔	
DNxHR SQ (4096x2160p/23.976)	✔	
DNxHR SQ (4096x2160p/29.97	✔	
DNxHR SQ (4096x2160p/59.94)	✔	

E. Avid Proxy PAL/NTSC 23.976/25/29.94/50/59.94 fps

Ingest mode	Avid Modes	Other modes
H264 Proxy 1.5Mpbs SD (240i/29.97)	✔	
H264 Proxy 1.5Mpbs SD (288i/25)	✔	
H264 Proxy 2Mpbs 1080 (270i/50)	✔	
H264 Proxy 2Mpbs 1080 (270i/59.94)	✔	
H264 Proxy 2Mpbs 720 (360p/50)	✔	
H264 Proxy 2Mpbs 720 (360p/59.94)	✔	
H264 Proxy 800kpbs 1080 (270i/50)	✔	
H264 Proxy 800kpbs 1080 (270i/59.94)	✔	
H264 Proxy 800kpbs 1080 (270p/23.976)	✔	
H264 Proxy 800kpbs 1080 (270p/25)	✔	
H264 Proxy 800kpbs 1080 (270p/29.97)	✔	
H264 Proxy 800kpbs 720 (180p/23.976)	✔	
H264 Proxy 800kpbs 720 720 (180p/25)	✔	
H264 Proxy 800kpbs 720 (180p/29.97)	✔	
H264 Proxy 800kpbs 720 (180p/50)	✔	
H264 Proxy 800kpbs 720 (180p/59.94)	✔	
H264 Proxy 800kpbs SD (240i/29.97)	✔	
H264 Proxy 800kpbs SD (288i/25)	✔	

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F. JFIF PAL/NTSC 23.976/25/29.94 fps

Ingest mode	Avid Modes	Other modes
JFIF 10:1 (496i/29.97)	✔	
JFIF 10:1 (592i/25)	✔	
JFIF 14:1 (496p/29.97)	✔	
JFIF 14:1 p (592p/25)	✔	
JFIF 15 :1s NTSC	✔	
JFIF 15 :1s PAL	✔	
JFIF 2:1 (496i/29.97)	✔	
JFIF 2:1 (592i/25)	✔	
JFIF 2:1 (496p/29.97)	✔	
JFIF 2:1 (592p/25)	✔	
JFIF 20:1 (496i/29.97)	✔	
JFIF 20:1 (592i/25)	✔	
JFIF 28:1 (496p/29.97)	✔	
JFIF 28:1 (592p/25)	✔	
JFIF 3:1 (496i/29.97)	✔	
JFIF 3:1 (592i/25)	✔	
JFIF 3:1 (496p/29.97)	✔	
JFIF 3:1 (592p/25)	✔	
JFIF 35:1 (496p/29.97)	✔	
JFIF 35:1 (592p/25)	✔	

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9. Network ports usage

Protocol	Port	Process	Description	Port used by IN2IT live	Port used between server and clients
Internal Woody communication					
TCP	4369	RabbitMQ (epmd)	RabbitMQ peer discovery	YES	
	5672, 5671	RabbitMQ	AMQP 0-9-1 and 1.0 clients without and with TLS	YES	
	25672	RabbitMQ	inter-node and CLI tools		
	35672-35682	RabbitMQ	used by CLI tools		
	30609	Arangod	Database server	YES	
	5001	Arangod Agency	Agency Arango pour la réplication	YES	
	7001	Arangod Coordinator	Agency Arango pour la réplication (cluster)	YES	
TCP & UDP	8600	consul	Consul DNS: The DNS server	YES	
TCP	8501	consul	Consul HTTPS: The HTTPs API	YES	
TCP & UDP	8301	consul	Consul LAN Serf: The Serf LAN port	YES	
	8302	consul	Consul Wan Serf: The Serf WAN port	YES	
TCP	8300	consul	Consul server: Server RPC address (TCP Only)	YES	
	8001	webserver	Access to IN2IT live scheduler	YES	YES
	4443	traefik	Traefik HTTPS port	YES	YES
	880	traefik	Traefik HTTP port	YES	YES
	30622	authserver	Woody auth server	YES	
	30619	dataserver	Woody data server, ux server	YES	
	30601	fileSrv	Woody engine	YES	
	30603	folderSrv	Woody engine	YES	
	30604	ingestSrvAMT2	Woody engine	YES	
	30612	ingestSrvAMT3	Woody engine	YES	
	30600	manager	Woody engine		
	30605	SNSearch	Woody social search	YES	
	30607	SNToken	Woody social token	YES	
	30613	turboplayer	Woody player	YES	

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