

- ▶ Universal Ingest Solution for Production, Playout and Archives
- ▶ Up to 16x HD or 4x UHD Capture Ports & Recorders in one System Unit
- ▶ Mix of Ports Types: SDI, HDMI, ASI, IP (depending on the model & options)
- ▶ In Basic Configuration: SMPTE ST2110, NDI, HLS, RTMP, RTP, UDP, SRT, RIST, Zixi



Main Features

Rec Schedules, Start Types, SDI Router & VTR Control

Recording according to schedules, configurable rules based on time tables. Cyclic recording mode with lifetime.

Creating, editing rec-schedules, import from traffic systems. Full control over all recording processes from the Air Manager client application or web clients.

Types of events start: Manually, at Hard Time, by external XML-RPC, VDCP, GPI Commands, by data from incoming SCTE-104, SCTE-35, DTMF markers, synchronous start of several recorders.

SDI Router Control for automatic or manual source switching before event starts, automated VTR Control via RS-422, IEEE1394 in batch capture mode.

Recording Profiles, Editing during Ingest

Multiple recording profiles can be configured for each recording channel: resolution, fps, audio/video codec types and file container. You can select the desired recording profile for each event in the rec-schedule.

Audio track switching and quick audio level adjustment from client workplaces during recording.

Several recorders can be connected to one capture port for parallel recording with different resolution, codecs and container.

Seconds after recording starts, incoming clips can be used for immediate editing in the News Cut client application.



SL NEO Media Database

Functionality of the built-in Media Database of SL NEO 1000 Server:

- initial content cataloging by transferring metadata from the record schedule lines,
- network multiuser access to recorded material, metadata, and proxies,
- content search in Server storage by txt metadata (10 text attribute fields in the standard SL NEO Server license),
- browsing, clip trimming, quick collective proxy editing in News Cut NLE application, content lifetime settings,
- content marking (adding and storing keyframes and other attributes).

SL NEO 1000 Servers supports manual and automatic marking of materials during recording by external commands, markers and signs in the input streams:

- Hotkeys from client applications, XML-RPC, GPI commands from external devices,
- SCTE-104, SCTE-35 data, and DTMF tags, detection of video freezes and black frames in input streams,
- searching for matches of video fragments in the input signal with the stored reference video.

Closed Captions Recording

Servers supports recording and storage of CEA-608, CEA-708, OP-42, OP-47 Closed Captions Data, DVB/ATSC Subtitles Data in SL NEO Media Database.

Hot Redundancy

SL NEO 1000 Servers supports parallel recording to the Main and Backup Servers, controlled from a single rec-schedule.

Automated File Export

Transfer Manager Lite is a server/client software tool for automatic migration of recorded files from local server storage to NLE-stations, on-air zone and to archive.

Transfer Manager supports multistream file copying based on rules.

SL NEO Media Database uses "growing file" technology when writing to local storage. Integration of Transfer Manager with Media Database allows to start the file copying process simultaneously with the start of recording. Copying in parallel with recording allows to significantly optimize workflow operations.

The full version - Transfer Manager Pro supports transcoding files (change codecs, container) with up/down/cross conversion.

Input Streams Monitoring

SL NEO platform offers two different technologies to monitor all AV inputs, outputs and internal system streams:

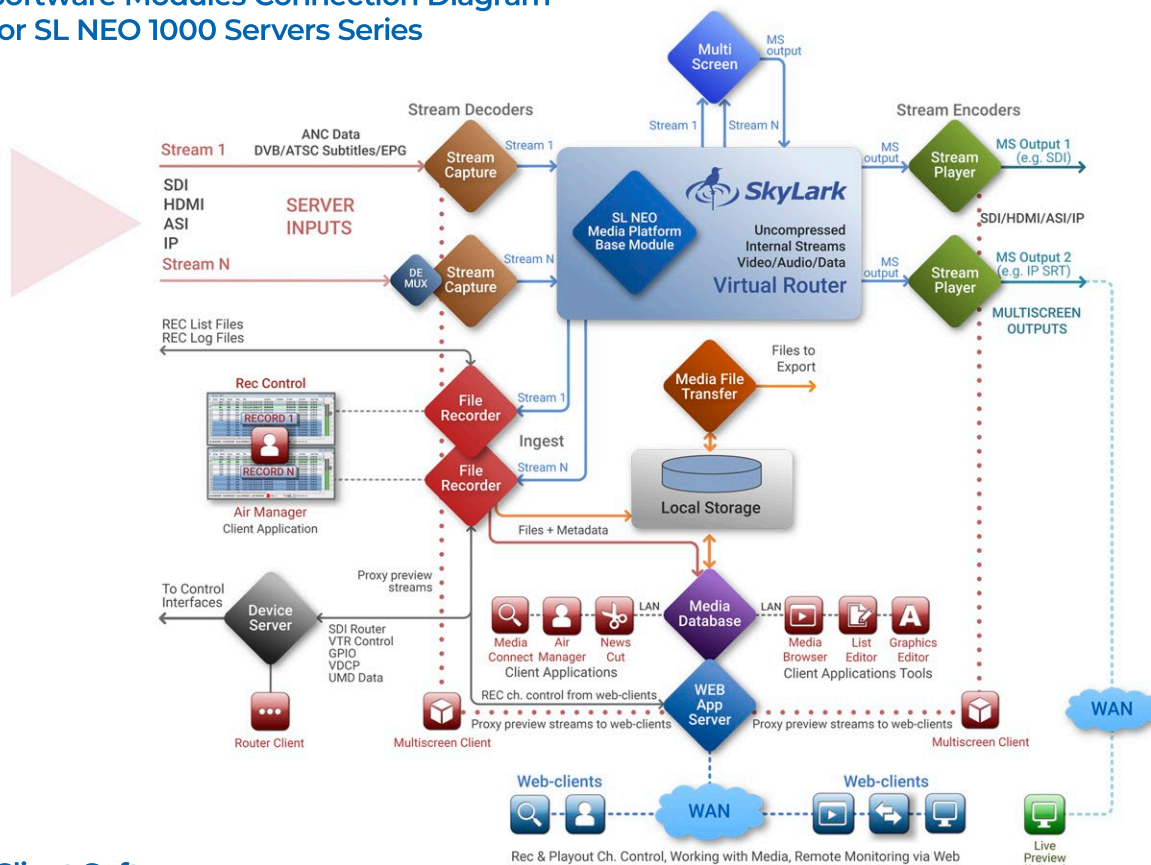
1. **Built-in MultiScreen Client application** allows workstations to perform on-line monitoring of AV signals coming from all active capture, recording and other Server Software modules in Network (in proxy mode).

2. **Optional SDI/HDMI and/or IP/ASI Multiscreen Monitor Output** is needed to view all input signals in multiview mode with an overlay of audio levels. Built-in up/down/fps conversion allows signals with different resolution and frame rates to be displayed together on the same display (in full HD or UHD mode).

Alarms will alert the operator to abnormal situations such as freeze frame or "black" field, when audio levels are exceeded or undershot. Integration with File Recorder modules allows you to visualize TC/Text information about current recording event.

For the SL NEO 1000 Servers, the Optional Multiscreen Monitor Output and built-in MultiScreen Client application allow you to monitor all signals/streams of the server Capture and Recording modules inputs.

Software Modules Connection Diagram for SL NEO 1000 Servers Series



Client Software

Air Manager is the main client application with integrated tools for control multiple recording channels, editing schedules, searching, browsing, importing/exporting content. GUI has "Record" windows with executable recording schedules (depending on the number of recording channels), displaying a list of tasks and their current statuses.

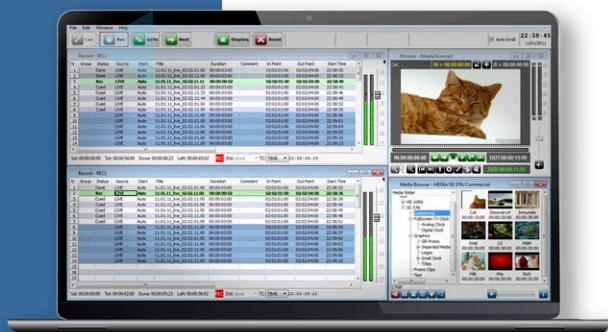
Each "Record" window connects to the File Recorder server module.

The **Media Browser** window displays the contents of the media database of each of the SL NEO servers on the network. This tool is used to search for content, edit text metadata, manually migrate and transcode files.

The **File Monitor** window is used to preview clips selected in the Media Browser, or in the rec schedule lines.

SL NEO 1000 Server Software Licensing

Only the number of Capture Ports, the number of Recording Channels and the overall format (SD/HD/UHD) are licensed. Any switching of settings between Capture Pport types (SDI/HDMI/IP/ASI) and supported IP protocols does not require additional licenses.



The Name of the Base Model of the SL NEO Server is made up of the values of the 5 variables located after the name of the product line:

SL NEO S F.C.P H A

S	F	C	P	H	A
First Digit of the SL NEO Series Number	Maximum Video Operating Mode	Number of Capture Ports or REC CH	Number of PGM CH or Output Ports	Type of Hardware I/O Board (Brand)	Useful capacity of the Array in Tb
SERIES	FORMAT	CAPTURE	PLAYOUT	HARDWARE	ARRAY
S = 1 - 1000 Series Multichannel Recorders	F = 2 - HD 1080i 50/60	for F = 2, C = 4...16	P = 0	H = D - Dektec DTA	SDI + Audio Embedded
	F = 3 - 3G 1080p 50/60	for F = 3, C = 4...12	P = 0	H = A - Dektec DTA	DVB/ATSC ASI (SPTS)
	F = 4 - UHD 2160p 50/60	for F = 4, C = 2...4	P = 0	H = M - Matrox DSX LE3/4	SDI + Audio Embedded
For Base Models 1000 Series: C = No. of Capture Ports = No. of REC CH P = 0 (no PGM CH, no Output Ports)				H = N - Nvidia NIC	IP: SMPTE ST 2110/2022-7
				H = E - Onboard 1GbE Port	IP: NDI, HLS, RTMP
				H = B - BlackMagic SDI I/O	SPTS IP: RTP, UDP, SRT, Zixi
				H = H - BlackMagic HDMI	SDI + Audio Embedded
					HDMI + Audio Embedded

Technical Specifications for SL NEO 1000 Servers

Hardware configuration, including CPU/HDD models, number and types of I/O Boards depends on the selected SL NEO Server Model and set of Options.

Server Hardware

Supermicro 2...4U chassis, two power supply modules in hot backup.
One or two Intel Xeon Gold CPU, 48/96Gb DDR4 RAM,
SSD for OS, two onboard 1GbE ports.
Built-in hardware RAID-10, 8x or 16x SE SAS 3.5" RE 8 or 16Tb array useful capacity.
OS Windows Server 2022 x64

Capture Ports & REC Channels

Capture Ports HD/SD: 4...16, Capture Ports UltraHD: 2...4
REC Channels HD/SD: 4...16, REC Channels Ultra HD: 2...4

Video Formats and Color Spaces

625i/525i, 720p, 1080i/1080p, 2K cinema 2048x1080p, 2160p
25/29,97/50/59.94/60 fps
Color Spacing: BT.601/709/2020, SMPTE ST2084, ARIB STD-B67

Input Streams: Interfaces, Protocols, Codecs

SDI: SD/HD/3...12G SDI, 4x 3G SDI/Embedded Audio
IP: SMPTE ST 2110, SMPTE ST 2022-7
IP: NDI, HLS, RTMP, UDP, RTP, SRT, Zixi, RIST, MPEG-DASH
DVB/ATSC IP UDP/RTP Unicast/Multicast SPTS/MPTS
DVB/ATSC ASI: SPTS/MPTS
Video Codecs: MPEG2/H.264/HEVC
Audio: 48kHz, 16 or 24 bit PCM, ADPCM, MPEG-1 L-II/III, AAC, AC3

Input Ancillary/MPEG2 TS Data

OP-42/47 WST Teletext, Closed Captions
CEA-608/708 Closed Captions
DVB/ATSC Subtitles, EPG
SCTE-104/SCTE-35 markers with metadata
VBI/VANC Data: VITC, AFD, WSS

Protocols, Device Support

XKEYS XK-24/60/80 Support
SNMP (SL NEO Software)

Ordering Information

To order the SL NEO 1000 Series Server, send us the following information:

- Base Model Name,
- Capture Ports formats (SD/HD/3G/UHD, FPS), types (SDI/HDMI/ASI/IP), protocols for IP and number,
- REC Channels formats (SD/HD/3G/UHD, FPS) and number,
- Codecs and Containers for Media Files,
- Information about redundancy scheme,
- Type (internal, external) and useful capacity of RAID-array,
- Required Hardware and Software Options,
- Required Client Licenses.

The Client Applications are pre-installed on the server platform, and one set of Client Software for installation on a workstation is included with each SL NEO Server.

Example:

SL NEO 12.10.0 D16

Max mode:	HD 1080i 50/60
Number of Capture Ports and REC Channels	10
Number of PGM Channels and Output Ports	0
Hardware: Dektec DTA	I/O: SDI + Audio Embedded
Internal Array:	Useful capacity 16 Tb

Video Codecs (Recording to Files)

SD/HD

DV25, DVCPRO25, DVCPRO50, DVCPROHD100, HDV
IMX 30/40/50
XDCAM EX SP/HQ, XDCAM HD LP/SP/HQ.422
DNxHD 120/145/180/220
AVCHD
XAVC 50/100/200, XAVC Long GOP
AVC-Ultra 50/100/200
AVC-Ultra Long G (12/25/50)
PRORES HQ/SD/LT
MPEG-2 I-Frames/Long GOP
H.264 L I-Frames/Long GOP

Ultra HD

H.264 8/10 bit
XAVC 300/480, XAVC Long GOP
AVC-Ultra 300/480, AVC-Ultra Long G
PRORES SQ/HQ
DNxHR SQ/HQ
HEVC 8/10 bit

Audio Codecs (Recording to Files)

RAW 16/24 Bit PCM, ADPCM, MPEG-1 L-II/III, AAC, AC3

File Containers

MXF-OP1A, MXF-D10
Avid MXF (OP-Atom)
Sony XDCAM HD/422 (MXF-OP1A)
Sony XAVC 50/100/200/300/480/LongGOP (MXF-OP1A)
P2 AVC-Ultra 50/100/200/300/480/LongG (MXF-OP1B)
Microsoft AVI, MPEG PS/TS
QuickTime MOV, DV DIFF
MP4, MPG, GXF

Environments for Recording

The number of file streams per recorder is two (Full Res + Proxy)

OS File System: work with files only, normal or fragment file recording mode (array of files with configured fixed duration)

SL NEO Media DataBase: work with virtual clips (files+metadata), growing file recording mode

Avid Unity/Interplay

Hardware & Software Options

Hardware Options

LTC Input (Including one of supported LTC Readers and Software License:
Adrienne AEC-41, Plura PLC, Miranda Little Red, Horita TCI-50)

GPIO (Including one of supported USB GPIO and Software License, up to 8
IO Ports: Ontrak ADU200, ADU2X8)

GPU Board

Increase Internal RAID Array Capacity

2x SSD in RAID-1 for System

Additional Hardware Ports

SD/HD/3/6/12G, 4x3G SDI, HDMI, ASI I/O Ports

NVIDIA ConnectX 10/25/40/50/100/200G Ports for SMPTE ST2110/2022-7

1G Ethernet Ports for UDP/RTP IP with SMPTE 2022-1 FEC

Standard 1/10G Ethernet Ports for IP Streams, Control, File Transfer

RS-232/422/485, i-Link/IEEE1394 Hardware Ports

AES I/O for Matrox DSX Boards

Software Options

Transfer Manager PRO

NVENC Assistance (for File Encoding or Output Stream Encoding)

Avid Unity/Interplay Support (for REC Channels)

Web Application Server

Client Applications

Air Manager, Rec Manager, News Cut

Additional I/O Ports & Channels (SD/HD or UHD Software Licenses)

Capture Port (SDI/HDMI, ASI/IP with DeMux and Stream Decoding, all supported Protocols)

Output Port (SDI/HDMI, ASI/IP with Stream Encoding, all supported Protocols)

MultiScreen Processor (4, 8, 16 or 24 Inputs Software License)

REC Channel (Full Res + Proxy)

Device Server Software Licenses

VDCP for REC Automation (Slave mode for Single REC Channel)

SDI Router for REC Automation (for Single Device)

VTR for REC Automation (for Single Device)

TSL5 UMD (Master mode for Single Device)

SDI Routers Control Protocols

Grass Valley Triton BDS

Grass Valley Nvision/Native Protocol/Vega/M-2100

Nevion Vikinx v128/Thor

Leitch

Imagine LRC

Kramer

BMD Videohub Ethernet/RS-232

Snell Switcher/Remote Protocol

Evertz Quartz/QMC-2

Sierra XXvse

Utah SC-4/RCP-1

Pro Bel SW-P-02/SW-P-08

Venux VM/SI/3000 ASCII

Ross Video Presmaster/NK-SCP/A

ELPRO SDZHD Series

AJA KUMO

LES

Profitt

