

# Intelligent Forensic Workstation

## NAVIGATOR LH-DP990



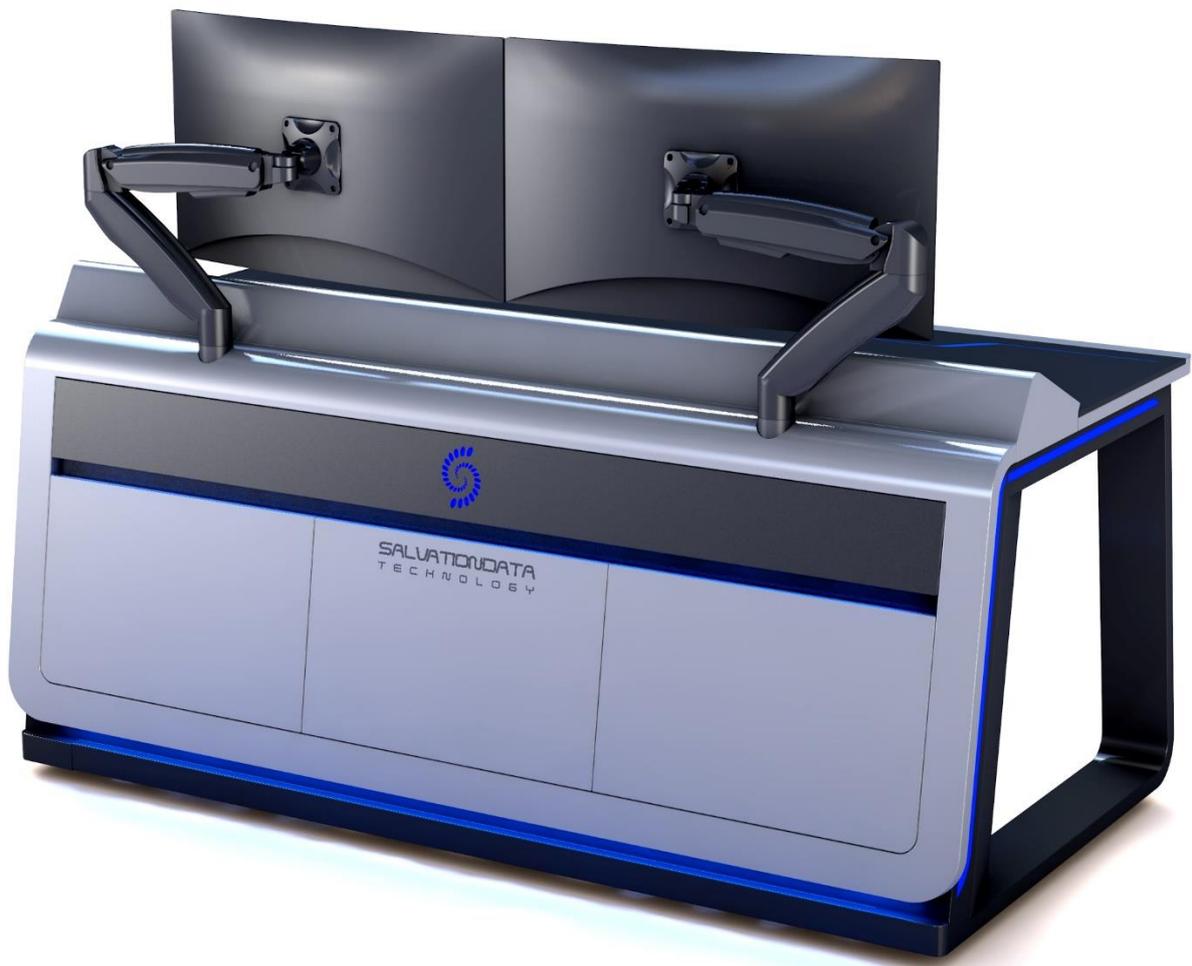
Intelligent Forensic Workstation - NAVIGATOR LH-DP990 is an all-in-one new generation forensic extraction and analysis workstation developed by SalvationDATA, to help worldwide forensic examiners work smarter and faster that can solve every investigation. Our workstation is the most reliable and stable platform designed by Certified Forensic Examiners from SalvationDATA with decades of real-world forensic knowledge.

The configurations and ergonomic designs were developed based upon our experience of working cases and feedback from our customers. The structure used in our workstation is a proprietary product designed by us and is not available from anyone other than SalvationDATA.

## Intelligent Forensic Workstation NAVIGATOR



We optimized CPU, RAM, and storage of our workstation for excellent performance when conducting forensic examinations, and we install and process all the major forensic tools during the design phase to make sure that our workstation is optimized for your forensic needs. Our vision is to design and build SalvationDATA workstations with features and components not available in any other forensic workstation.



## Hardware Configuration

### Basic Specifications

Dimensions	1800 × 940 × 850 mm (excluding monitor)
Power supply	220V
Color	Customizable
Display	Two 31.5-inch 2K curved monitors
Processing	Intelligent manufacturing/manually polished
CPU	i7-9700, 6 core 12 threads, main frequency 3.2GHz
RAM	64G, DDR4

Discrete Graphics	4GB
Hard Drive (System)	480G SSD
Hard Drive (Data Storage)	8T HDD*2
external device	Blu-ray disc drive, mobile phone wireless charging module, id card identification module, high-beat instrument
Other	Gigabit wireless network card, WIFI and Bluetooth, and 10 gigabit fiber network card expansion
Storage Interface	IDE/SATA/SAS/SCSI/USB3.0/TF, SD, CF, XD, MS and other storage medium write-protected interfaces
Interface	Fourteen USB3.0 read-write interfaces, two 220V power interfaces, one network interface and two audio ports
Storage	Four SATA/SAS/ hard disk read-write storage;4 SATA/SAS/ hard drive write-protected storage
Patent	Patent rights for appearance and utility model
OS	Pre-installed 64-bit windows10 simplified Chinese professional version
<b>Customization</b>	<b>All above Specs includes workstation appearance can be changed according to the requirements.</b>

### Detailed Specifications

AHCI SATA	SATA3 (6Gbps); RAID 0, 1, 5, 10
SCU SATA	SATA3 (6Gbps); RAID 0, 1, 5, 10
SATA	10x SATA3 (6Gbps) ports
LAN	2x RJ45 Gigabit Ethernet LAN ports
USB	USB 3.0 ×2 USB 2.0× 6
Audio	7.1 HD Audio with optical S/PDIF
PCI-Express	3 PCI-E 3.0 x16 2 PCI-E 3.0 x8 1 PCI-E 2.0 x4 (in x8)
Write-Blocker Modules	SATA2.5'/3.5' write-protected IDE2.5'/3.5' write-protected

	SAS2.5'/3.5' write-protected USB3.0/2.0/1.1 write-protected SD/MMC/CF/CFII/MS/MS Duo/TF/M2 write-protected
RAID Chassis(Optional)	One (1) 2.5" Bay with 2 Removable Trays One (1) 3.5" Bay with 3 Removable Trays
RAID Interface(Optional)	LSI SAS 9207-8e Adapter implanted Supports 8 external 6Gb/s SAS+SATA ports Two, x4 external mini-SAS connectors (SFF8088) Supports up to 1024 SAS or SATA end devices
CD Drive(Optional)	16X SATA Blu-ray Burner
Special Module	1 damage storage media defect control module, specially designed to diagnostic and recover data from including but not limited to defective hard drives with bad sectors or firmware issues.
Special Decoration	Unique LED Light strips with blue color embedded into the workstation.
Charging Module	1 mobile phone wireless charging module.
Table Top	Equipped super hard glass table top with blue LED Light strips inside.
Customization	<b>All above Specs can be changed according to the requirements.</b>

## Device Management

- 1) Support to identify the working condition of hard disk storage, multi-functional write-protected, optical drive, USB, high-beat instrument, wireless charging and id card identification module;
- 2) Support the detection of CPU, hard disk and graphics card temperature;
- 3) Support the detection of Wi-Fi on state.

## Computer Forensics

### Forensic Data Recovery

- Fully support systems in NTFS, FAT12/16/32, exFAT, EXT2/3/4, HFS, HFS+ and HFSx, XFS, JFS, CDFS, UFS, YAFFS, YAFFS2 etc.
- Support file directory recovery for FAT file system

- Support PC, laptop, USB, SD card, CF card, TF card, Memory Stick, voice recorder, web server, IPC, surveillance recorder and diverse virtual storage file, as well as hexadecimal view. The supported format includes DD image(as well as mobile phone image), E01 and AFF image, etc.(for DRS Preview, certain hardware interfaces shall be prepared by the user himself)
- Support data recovery from VMDK virtual machine files.
- Support RAID recovery, including RAID0, RAID1, RAID5, RAID5e, RAID5ee, JBOD, and HP dual cycle, allowing the options of auto/manual analysis.
- ExtremeRI provides first-class fragment rebuilding technology into DRS, going deep into free sectors to scan for fragments and reconstruct files through baselevel calculation. DRS offers expected results to recover damaged photos and files, breaking through the limits of data recovery.
- Support scanning lost partition, and the custom scanning partitions is based on partition type and size.
- Support fast scan mode and advanced scan mode, which make recover data more flexible and efficient.
- Recover files by file signatures from unallocated data area, supporting 266 types of file formats including pictures, videos, compressed files, e-mails, etc.
- Support raw scan with customized file signature.
- Support breakpoint restore function which skips the recovered file to shorten the recovery time.
- Pattern scan supported, only files under designated directory are scanned. Extremely efficient when recovering files from bad sector disks.
- Save scanning history automatically, easy access of history scanning results.
- Three alternative displays of scanning results, sorting recovered files by real directories, file extensions, or last modified time.
- File content keywords search, supporting ASCII, big-endian Unicode, little-endian Unicode, GB2312, UTF8, supporting simultaneous search with multiple

codings.

- Keywords search of filename folder name or file content, supporting hexadecimal view.
- Support specifying time range to search.
- File filtering by size or properties.
- Display of scanning results in detailed lists.
- Files thumbnail preview. Picture preview, zoom, and rotate.
- Documents preview, supporting doc, docx, xls, xlsx, ppt, pptx, pdf, txt, ini, c, cpp, h, f, xml, etc.
- Hex analyzer embedded, supporting value search, block navigation, data translator, template selection, calculator, etc.
- Simultaneous recovery of multiple partitions.
- Filtering out invalid files when recovering files.
- Recover file with the original directory structure.
- Hash calculation for all files recovered.

## Disk Diagnostics

- One-key quick disk diagnostics, detecting disk's PCB status, firmware function, ATA encryption, hidden sectors, S.M.A.R.T info, etc. (partially supported in DRS Preview)
- Disk firmware encryption detection and one-key decryption. (not available in DRS Preview)
- One-key HPA restore, recovering hidden sectors. (not available in DRS Preview)
- Quick diagnostics for USB drives, acquiring basic info, scanning sector status.
- Two bad sector scan modes are offered for HDD, the fast scan and the deep scan, to detect HDD bad sector status.
- Direct sector view, check out any sector data in decimal or hexadecimal display.

## Firmware Recovery

(Firmware recovery is not available in DRS Preview)

- Possess the core value out of the past 15 years experiences, DRS aims to provide complete solution to firmware damage, supporting all popular brands including Seagate, Western Digital, Maxtor, Hitachi, Samsung, Fujitsu and Toshiba, in total with thousands of versions.
- Fast recovery on common firmware problems, hidden sectors and unlock ATA encryption.
- Support Western Digital USB hard disk decryption.
- Support Western Digital slow problem recovery.
- Support Seagate common firmware problem recovery, such as disk busy, busy after ready, LED:CC, MCMT, partial sector inaccessible, etc.
- Seagate diagnose port unlock.
- Hitachi one-key decryption, partial sector inaccessible recovery.
- Toshiba G-list corruption recovery, virtual translator.

## Disk Imaging

- DRS High-speed Image Module works for normal HDD, USB Flash, CF cards and TF cards, RAID, Imaging file, etc. It can copy & clone data from HDD, USB Flash, CF cards and memory sticks, RAID, Imaging file which is widely applied to HDD copy by byte-to-byte and HDD image in the field of the digital forensics field.
- Supporting image format: DD, E01, AFF, VHD and VHDX
- Support imaging in bad sectors, provide solutions to stuck disk when imaging and even to inoperable sector data etc. Users can customize the configuration of accuracy to load sector data and image copy-failed sectors. The whole process of image is displayed on real time. Through anti- stuck technology, DRS offers an ideal solution to bad sector imaging. (not available in DRS Preview)
- Apply UDMA-133 transform technology, and the testing copy speed reaches 12GB/min.
- Support reading data by forward/backward or reading repeatedly in order to

extract more data. (not available in DRS Preview)

- Support identify the damaged head and adjust to selective head imaging. (not available in DRS Preview)
- Best solution for disks with bad sectors. (not available in DRS Preview)
- Break point resume, imaging process can be recovered and continued after unexpected interruption, like system crash.
- Support imaging a larger drive to a smaller drive. (the image will start from the first sector)
- Hash calculation for images.

## Disk Monitor and Control

- Real-time monitoring of disk power and current, showing in chart or graphic display. (not available in DRS Preview)
- Real-time display of disk basic info and connection status. (not available in DRS Preview)
- Disk power control, motor control, disk hard and soft reset. (not available in DRS Preview)
- Disk read and write control, transmission speed control. (not available in DRS Preview)
- Real-time data display, records erase. (not available in DRS Preview)
- Automatic system log, support to export or erase system operation log. (not available in DRS Preview)

## Forensic Report

- Disk diagnostic report, forensic imaging report and data recovery report provided.
- Support report preview with zoom control.
- Support exporting report in HTML or PDF format.
- Support printing report.

## Others

- Multi-tasking, supporting running up to 4 DRS process at the same time.
- Software environment auto detection.
- MP4 repair tool and Hash calculator provided in tool box.
- Support Hash calculation for physical drives.

## Smartphone Forensics

### 1 Capabilities

#### 1.1 Key Features

- ★ Automatically detect smartphone brand & model, and recommend best extraction solutions.
- ★ Multi-tasking, support up to 16 tasks running simultaneously.
- ★ Intelligent analysis, automatically alert the user when sensitive data is detected. Analysis items include keywords, APP, URL, Phone, MD5.
- ★ Tasks can be dragged to different screens if multiple monitors are installed.
- ★ Fully automatic backup and extraction process for Huawei, Xiaomi, OPPO, ZTE smartphones.
- ★ Multiple filtering options, including time, status, App, mark, keywords and Regex.
- ★ File explorer for Android and iOS, supports to view, search, preview and export files saved on smartphones.
- ★ Intelligent processing for WeChat & QQ, remove invalid or duplicated data.
- ★ Support extracting data from various kinds of operating systems like Android, iOS, Yun OS, Tizen, BlackBerry, WebOS, Windows, Symbian, Palm, BADA, Windows Mobile, MTF, Spreadtrum, and other Chinese operating systems.
- ★ Physical extraction from Tizen smartphones.
- ★ Physical extraction from part of Samsung, Huawei, OPPO's models without root access.
- ★ Support iPhone data extraction, support list is updated to iPhone11;
- ★ Physical extraction from part of the smartphones equipped with Qualcomm chipsets.

- ★ Physical extraction from part of the smartphones equipped with MTK chipsets.
- ★ WeChat data extraction from PC client backup.
- ★ Downgrade APP data extraction and auto-analysis.
- ★ WhatsApp backup extraction, decrypt WhatsApp backup encryption.
- ★ Data to be extracted via USB, JTAG, MTP and ISP.
- ★ Extract data from phones with damaged USB port.
- ★ Support direct data extraction under third-party recovery mode.
- ★ Extract data from almost all Chinese smartphones and feature phones.
- ★ Data to be extracted via MTP includes image, audio and video.
- ★ Recover images, audio and video files from SD and TF card.
- ★ Extract data from SD and TF card via RAW Scanning;
- ★ Support data extraction/parsing from DD image file, UFED image file and Backup folder.
- ★ Break point resume, imaging process can be recovered and continued after unexpected interruption.
- ★ Support extracting data from rooted and unrooted Android Phone, and from jailbroken and non-jailbroken iPhone.
- ★ Support extracting data from phones locked by pin code, finger print and pattern lock.
- ★ Support direct data extraction with BootLoader Locked for certain models.
- ★ Recover signature file.
- ★ **SQLite Master-Pro view.**
- ★ Support screen lock removal for certain OPPO models.
- ★ Support data recovery from SMS/Contacts/Call Log and multiple APPs(such as Wechat/WhatsApp/Twitter, etc.);
- ★ Support file system extraction from iOS/Blackberry/WebOS/YunOS phones;
- ★ Support Call Log/Contacts/SMS fragmented data extraction;

## 1.2 Others

1. Software was developed by SalvationDATA and is available in both Chinese and English language.
2. Support multiple mobile phone brands including iPhone, Samsung, Huawei, Oppo,

- VIVO, MI, HTC, Blackberry, Nokia, Motorola, NEC, Dopod, Sony Ericsson, LG, ZTE, Lenovo, Meizu, Coolpad and other Chinese brands including Chinese OEM manufacturer for overseas mobile brands;
3. Extract data from phones with damaged USB port.
  4. Support data extraction from phone/SIM card/SD card/TF card/image file;
  5. Support extracting SMS/contacts/call log from SIM card;
  6. Support extracting image/audio/video/text/other types of information from external storage card;
  7. Recover data from SIM/UIM card;
  8. Support recovering fragment data/data decryption from QQ/Wechat;
  9. Support physical imaging for Android Phone as DD file and imaging by specific partition;
  10. Automatic acquisition of IMEI and MAC address;
  11. Support extracting and recovering image/audio/video data from mobile phones;
  12. Support extracting mobile phone basic information including device info, installed apps, contacts, call log, SMS, MMS, bluetooth, calendar, clock, WIFI, time of powering on/off, synchronized account;
  13. Support extracting social App information, including WeChat, QQ, QQ Light, Enterprise QQ, Twitter, Sina Weibo, Skype, Telegram, WhatsApp, Zalo, Viber, Zello, Snapchat, LinkedIn, Instagram, Messenger, Coco, Facebook, LINE, Viber, etc;
  14. Support extracting Browser information including Built-in Browser, UC Browser, QQ Browser, Opera, Chrome etc;
  15. Support extracting Email information including QQ Mailbox, NetEase Mail, Android Mail, Gmail, HTC Mail, etc;
  16. Support extracting Map information including Google Map, TencentMap, GEO Tags
  17. Support extracting data from various Lifestyle apps like Alipay, Google Drive, SoGouSearch, Ctrip, Tmall, Taobao, etc.;
  18. Support data decryption of Wechat/QQ, including chat log/audio/video/image;
  19. Support displaying data in different ways;
  20. Automatic identification of phone model, operation system etc.;
  21. Support photo shooting for mobile phone;
  22. Support screenshot capture for Android phones.
  23. Support load task history with XAT file;

24. Open or import local CP format case file.
25. Device management, devices can be ejected, moved or deleted from cases.
26. Cases management, open/delete local cases.
27. Support details edit for current case.
28. System operation log, support to review or export logs.
29. Plug-in management, plug-in list and detail display.
30. Support customized intelligent analysis items, can add/edit/delete analysis items.
31. Forensic report in HTML/PDF format.
32. Forensic report customization with user-defined information.
33. Report filter, support to specify certain devices, Apps, marks, data to be included in the report.
34. MD5 authentication for smartphone files.

## **DVR Forensics**

### **A. Forensic Features**

- Logical write-protection, VIP software operates in a forensically sound manner, all sources being examined are under read-only environment.
- Physical write-protection (with hardware-kit), connect source drive with the write-blocker equipped in the kit to ensure chain of custody. Physically protect the source and avoid any possibility of modification.
- Forensic imaging, can create bit-to-bit copy forensic images of source drives.
- Support disk to disk, or disk to file imaging.
- Support MD5, SHA-1 Hash value generation for image verification.
- Can automatically generate forensic report.

### **B. Video Extraction**

- Capable of accessing surveillance video data directly from CCTV DVR/NVR hard drives.
- Bypass DVR/NVR system login password.
- Can extract videos from damaged or inaccessible DVR/NVRs.

- Can recover inaccessible video files, including deleted, lost, fragmented video files.
- Can recover video files from DVR/NVR hard drives which have been mistakenly formatted or corrupted.
- Can recover fragmented video clips from overwritten video footages.
- Support to extract video meta data including time stamps, channel marks.
- Support to extract and recover videos from a large number of popular surveillance brands including but not limited to: Hikvision, Dahua, Honeywell, SONY, SONY SXD, SAMSUNG, BOSCH, JOVISION, RaySharp, WAPA, VISIONDIGI, HANBANG, JOOAN, iCatch, Viewse, Woshida, Hanbang, Landun, Streamax, Zhiling, Loosafe, Diesbo, MHK, ZHONSH, XENON, Tiandy, Uniview, Seeyou, Samsung SRD, Webgate, XM, ZENO, TP-LINK, Hanhua, PRIME, BlueStar, TESWELL, CYTech, etc.
- Support to extract and recover videos from a large number of popular file systems including but not limited to: FAT32, exFAT, NTFS, JFS, EXT2/3/4, HIK 264, HIK FAT, DHFS\_41, WFS0.4, DSB\_DVR, WFS0.3, HIK\_IMHK, WFS0.1, BLUESKY, HB\_MS, VVF, DHFS\_4, HB\_dc, JVS\_801, STL\_MPEG, MP4, DHFS\_40, WB, LOOSAFE, ZHILING1.0, HB\_fat, WB\_0dc, BOLI 264, WFS0.2, WB\_1dc, JVS\_601, HB\_msv2, RMSX 264 etc.
- Multi-tasking, can extract and recover from multiple DVR/NVR hard drives simultaneously.
- Support to transcode proprietary format video files into AVI format, so normal video plays can play the videos exported.
- High-speed extraction, video extraction speed above 3GB/min.
- Support network extraction mode, can connect to a running DVR/NVR system with local network connection, and extract video files to local storage drive.
- Capable of automatically scanning network for existing DVR/NVR systems.

## C. Video Player

- Support to preview and play videos in proprietary video formats.
- Playing speed adjustable, including 1x, 2x, 4x, 8x, 6x and 1/2x, 1/4x, 1/8x, 1/16x speed.
- Support to capture and save snapshots.
- Support to cut and save video clips.
- Support to zoom-in or zoom-out on video footage.
- Support to split screen and play 4 videos simultaneously.
- Can transcode video files for better playing experience.

## D. Video Retrieval

- Support motion detection, automatically mark moving objects in video footages.
- Time bar marking, use different colors to mark static sections and motional sections on the time bar, so investigators can quickly skip useless footages and jump to suspicious footages.
- Image recognition and filter settings to help quickly locate target objects in the footage. Filter options including: color filters, focus area, movement direction, trap wire, people and cars.
- Display a list of all footages match to help quickly spot and watch suspicious footages.

## E. Other Features

- Automatically save scanning history, so that investigators don't have to scan the same hard drive every time.
- Time calibration, can set time offset to adjust the time of the recorded videos to the real time, in case time settings in the DVR/NVRs being examined is not correct.
- Customizable tool-box, users can add customized tools for quick access.
- **Quick link to Amped FIVE, extracted videos can be sent to Amped FIVE with one simple click for video enhancement.**

## Tool Box

- **Computer Forensics Accessories**

Item	Qty.
USB3.0 Data Cable	1
Adapter of SATA/3.5" IDE	1
SATA3.0 Extension Cable/Card	1
USB to IDE adaptor	1
Serial Command Transmitter	1
Serial Jumpers(Kit)	1
12V/6A, AC Adapter with cable	1
Adapter of 3.5"IDE/2.5"IDE	1
USB3.0 Multi-functional Card Reader	1
USB3.0 4-in-1 Hub	1
Installation CD/DVD	1

- **Smartphone Forensics Accessories**

<b>Item</b>	<b>Qty.</b>
Power Supply Bag	1
Accessory Organizer	1
Acquisition Tool	1
Three-in-one USB cable	2
iPhone4 Data Cable	1
iPhone5 Data Cable	1
Android Data Cable	1
Storage Box	1
SIM Card Reader	1
SIM Card Adapter	2
SD Card Reader	1
Blank UIM Card	5
<b>USB Drive</b>	1
<b>Xiaomi Engineering Cable</b>	1
<b>USB System Drive</b>	1
<b>USB Dongle</b>	1
<b>Quality Certification</b>	1
<b>Warranty Card</b>	1

- **DVR Forensics Accessories**

<b>Item</b>	<b>Qty.</b>
Accessory Bag	1
SATA Cable	1
Internet Cable	1
HDD Adapter	1
USB Dongle	1
DVD-ROM	1
Quality Certification	1
Warranty Card	1