



Technical Bulletin

To: DW Customers

Date: August 21, 2022

Re: DW Spectrum IPVMS
v5.0.0.35746 Release Notes

DW Spectrum® IPVMS Software Update v5.0.0.35746

New Software Version: v5.0.0.35746

Previous Software Version: v4.2.0.32842

Release Date: October 21, 2022

Important Changes

Breaking Changes and Known Issues

- Users of *DW Spectrum Mobile v21.1* or earlier can no longer access systems running *DW Spectrum Server v5.0* or newer and must update to at least *DW Spectrum Mobile v22.1* for continued mobile support
- M1 Macintosh users will not be able to connect with older Systems through DW Spectrum desktop client's compatibility mode
- Existing version of [DW Witness](#) will no longer work with DW Spectrum Server v5.0 or newer. An updated version is available on the *DW Witness* product page
- Unable to add or connect Servers with *DW Site Viewer* for Apple TV
- System login using [DW Cloud](#) credentials no longer works without an Internet connection.
- Digest Authentication is deprecated. Digest Authentication can still be used by enabling per user.
- The following Web Client and Mobile Client features are unavailable:
 - Archive encryption
 - Last minute recording
- *Resource Panel* and *Notifications Panel* can no longer be pinned/unpinned

- Removed context menu and hotkeys for web pages:
 - “Enter” hotkey – maximize item
 - “I” hotkey – show info
 - “Del” hotkey – remove from layout
- Bosch analytics support suspended for:
 - Blurry signal
 - Flame detection
 - Signal loss
 - Smoke detection
- DW MEGApix model *DWC-MT95WW28TW* requires an additional file be added to the DW Spectrum Server “plugins” folder to enable analytics for the camera. This plugin will be automatically included in the next DW Spectrum patch version

Operating System Platform Changes

- Added support for Macintosh computers with the Apple M1 chip. A separate distribution is provided:
 - The regular distribution can be installed on x64-based Macintosh and M1 Macintosh computers but is not optimized for M1 Macintosh computers. This distribution is not available for versions 4.2 and older, so Mac M1 users will not be able to connect to their old systems in *Compatibility Mode*
 - The M1 distribution cannot be installed on x64-based Macintosh computers
 - Not able to connect with *DW Site Viewer* for Apple TV
- Desktop client can now be run on Macintosh computers with Apple Silicon (e.g., Apple M1 chip) when using DW Spectrum v5.0 and up
- Added support for MacOS 12 (Monterey)
- Added support for Windows 11
- Added support for Windows Server 2022

New Features


- All Internet requests use OS SSL/TLS Certificate Validation to prevent MITM (man-in-the-middle) attacks, including but not limited to VMS updates, VMS-Cloud communications, license validation, statistics, etc.
- All Server connections use SSL/TLS Certificate pinning to render MITM attacks impossible:
 - Servers exchange certificates on merge and validate them on every connection
 - Clients pin certificates on the first connection and validate them on each subsequent connection
 - Clients using *DW Cloud* to connect validate Servers through the *DW Cloud* service
 - Clients may use "strict mode" to limit their connections to only trusted Servers
- Servers and Clients use new session-based (bearer token) authentication by default
 - For local users, old authentication is disabled by default, which prevents MD5 password storage in the local DB (database)
 - For *DW Cloud* users, OAuth2 authentication is used by default, which prevents a Server owner from compromising a user's *DW Cloud* password and renders offline *DW Cloud* login attacks impossible
 - Two-factor authentication may be enabled on *DW Cloud* to make OAuth2 authentication even more secure
 - Many Server API calls require a fresh user session to execute, which requires password confirmation at the API level
- Redesigned Server Web Admin:
 - Users can be added and removed. Passwords can be changed
 - Three new tabs:
 - "Servers" – storage information and ability to add external storage
 - "Cameras" – camera information, ability to enable recording and change motion sensitivity
 - "Licenses" – all recording license information and the ability to activate licenses
- Independent desktop client updates:
 - The *DW Spectrum Client* desktop distributive can now be released separately from the *DW Spectrum Server* distributive
 - The *DW Spectrum Client* can automatically download and install the latest version of the desktop client to be compatible with the current *DW Spectrum Server* version

- The *Objects* panel was redesigned to provide a user-friendly object search function
- Redesigned the DW Spectrum Client's *Welcome Screen*:
 - View all or a subset of discovered systems by selecting a display mode:
 - All Systems – show all systems
 - Favorites – shows only favorited systems
 - Hidden – shows only hidden systems
 - System sorting priority considers the added statuses (Favorite/Hidden)
 - Added an option to search systems by certain attributes:
 - System name
 - Server name
 - IP address (from any of the servers discovered by the Desktop Client)
 - System owner (only for *DW Cloud* systems)
 - User's email (only for *DW Cloud* systems)
- Custom Resource Groups – Users can now organize cameras and other resource into custom groups in the *Resource Tree*. To create a custom group, select two or more resources, right-click the selection, and then click "Create Group".
- Video Preview Thumbnail (only for Windows and macOS) – displayed when hovering the mouse cursor over the *Timeline*
- Archive Encryption – if enabled, the video archive will be encrypted and viewable only in the *DW Spectrum* Desktop Client, Mobile Client, Web Admin, and *DW Cloud* Web Portal
- Audio Video Mapping:
 - The audio source from a camera or I/O module can be used in place of a microphone for another camera
 - The 2-way audio button can be used on cameras without speakers to transmit the audio to another device that has a speaker
- 360° panoramic images and videos that use equidistant projection can now be dewarped in the Desktop Client
- Using the Desktop Client, web pages which are not typically accessible on the client computer can now be proxied via the Server
- Restore the previous session – states of certain interface elements can be saved and restored upon launching the Desktop Client
- Client JavaScript API embedded in *Web Pages* to enable additional functionality:

- Open/close cameras
 - Play/pause videos
- Added support for ZFS (Zettabyte File System) to the Server
- The minimum and maximum archive period can now be set in minutes, hours and days

System Improvements

- New system setting and general improvements to HTTPS cameras:
 - Introduced a system-wide setting that forces HTTPS only communication for cameras (System Administration > "Use only HTTPS to connect to cameras"). If this setting is enabled, the server will drop connections to cameras that do not support HTTPS or a supported proprietary API protocol.
- Improved "Camera Settings" dialogs:
 - Added new recording modes to the *Recording Schedule*:
 - Object only
 - Object + Low res
 - Motion + Object
 - Motion + Object + Low res
 - If the *Recording Schedule* is invalid, an exclamation mark icon will be displayed in the *Resource Tree* and a notification with the message "Recording schedule is invalid" will appear in the *Notifications Panel*. The recording mode will be set to "Always" until the issue is resolved.
 - Added the option to select a camera stream to use for object detection (see *Motion* tab).
 - Configuring a camera is more straightforward and reduces the chance of making mistakes.
 - The *Recording Schedule* on auto-discovered cameras comes with the following settings by default:
 - Recording type: Motion Only
 - Quality: High
 - FPS: Max
 - Removed the option "Keep camera streams and profile settings" for RTSP/HTTP streams.
 - The "FPS" and "Quality" fields on the *Recording* tab will be disabled if "Keep camera streams and profile settings" is enabled or "Allow system to optimize camera settings" is disabled.

- The *Recording* tab better alerts the user when there are not enough licenses on the system.
 - A warning banner on the *Analytics* tab will be shown when recording is not enabled on the camera.
 - PTZ sensitivity can now be modified in the *Expert* tab.
 - The mount correction angle preview now shows a virtual rotation of the camera around its optical axis.
- The *Resource Tree* was optimized for large systems and now has a quicker load time on the Desktop Client.
- Video playback on the Web Client was improved.
- Redesigned Fisheye controls — added hotkeys to turn and zoom in/out.
- New Archive Backup Options:
 - Archive associated with one event type: recorded motion, bookmarks, or objects.
 - Archive associated with all combinations of event types:
 - motion and bookmarks
 - bookmarks and objects
 - motion and objects
 - motion, objects, and bookmarks
 - The entire recorded archive
- Improved tooltips in the *Resource Panel*:
 - Minimal delay when viewing the video preview thumbnail for cameras with recording enabled.
 - When hovering over a resource, the video preview thumbnail updates every 2-3 seconds.
 - "Preview is outdated" text is displayed over the video preview thumbnail if it has not been updated in over 15 minutes.
- On cameras with recording enabled, the last-minute of the recording is now available for playback in the Desktop Client.
- Added Quick Start Guide to desktop and Windows Start  menu.
- Improved storage management and reduced the chances of storage conflicts when using the same storage path for multiple Servers.
- The "Description" column was added to the *Bookmark Log*.
- "Copy Bookmark Text" is now available in the context menu. Use this feature to copy the selected Bookmark's contents from the *Bookmark Log* in text format.
- Added the following hotkeys to interact with the *Resource Tree*:

- Ctrl (Cmd) + F hotkeys – selects the search box.
 - Up/down arrow hotkeys – shifts selection between the search box and items in the *Resource Tree*.
- An order of storage locations on the "Server settings" dialog was changed. Now it's grouped in the following order and then sorted alphabetically:
 - Local
 - USB
 - Network (network)
 - Network (smb)
- Added new hotkeys for *Timeline* actions:
 - Press the " [" key to set the starting point of a timeline selection based on the mouse pointer's position over the *Timeline*.
 - Press the "] " key to set the ending point of a timeline selection based on the mouse pointer's position over the *Timeline*.
- The default search filter in the *Bookmark Log* was changed from one year to one week.
- Exporting motion-only video now ignores all gaps between motion events and stitches the separate motion events together to form seamless playback.
- Changing your password in the desktop client now automatically updates the saved password on the Welcome Screen (Login Dialog).
- Redesigned the in-client user manual:
 - Modern look and feel
 - Improved search tool
 - Collapsible/expandable topics
- In the context menu for *Web Pages*, "Edit" was renamed to "Web Page Settings".
- The visibility of passwords can be toggled (left-click and hold) in the following dialogs: Add Devices, Camera Credentials, LDAP Settings, Login Dialog (Welcome Screen), SMTP simple/advanced Settings, Create User, Add network storage, Connect to Server.
- The default search filter in the *Bookmark Log* is now one week instead of one year.
- Added an option to the *Expert Settings* for ONVIF cameras to make the server use ONVIF/media2 to get their profiles.
- System Owners will receive mobile push notifications by default for administrator-related events.

Analytics and Device Improvements

- DW devices support:
 - Added tripwire sendAlarmData support to the Digital Watchdog MX9 plugin.
 - Added support for the following Digital Watchdog camera models: DWC-MB95Wi28T, DWC-MB95Wi36T, DWC-MV95Wi28TW, DWC-MV95Wi36TW, DWC-MV95WiATW, DWC-MT95Wi28TW, DWC-MT95Wi36TW, DWC-MT95WiATW, DWC-MT95WW28TW
- Bosch analytics plugin:
 - The plugin can now retrieve object-type information from supported cameras.
- Added support for Dahua LPR:
 - Supported devices – All Dahua cameras with supported LPR (for example, ITC215-PW6M-IRLZF)
 - Traffic Junction event
- Added Provision ISR analytics for DI-380IPE-MVF
- Dahua analytics (tested on DH-TPC-BF2221-T):
 - Fire detection
 - Temperature alarm
 - Smoking detection
- Added Traffic detection event support for Dahua DHI-ITC215-PW4I-x, ITC237-PU1B-IRx, ITC237-PW6M-IRLZF.
- Added support for Dahua in-camera analytics to Loryta IPC-B5442Ex.
- Hikvision Analytics: Added support for a new face detection method called “Face Capture” available on compatible Hikvision cameras.
- Added support for analytics events from NYX cameras:
 - NYX IPD4-28F IQ+
 - NYX IPD4-36F IQ+
 - NYX IPD4-2812ME IQ+
 - NYX IPB4-28F IQ+
 - NYX IPB4-36F IQ+
 - NYX IPB4-2812ME IQ+
 - NYX IPB4-722ME IQ+
 - NYX IPDC4-28F IQ+
 - NYX IPD8-28F IQ+L

- NYX IPD8-2812ME IQ+L
- NYX IPB8-28F IQ+L
- NYX IPB8-2812ME IQ+L
- NYX IPD5-PA
- NYX IPD5-28F IQ+ COLOUR
- NYX IPD4-28F IQ+ ALERT
- NYX IPB2-722 ANPR
- NYX IPZ25 STAR+
- New Supported Axis Devices:
 - AXIS Q1775, Q6044

Multi-sensor cameras:

- Alibi ALI-NT4002x
- Arecont Vision AV8476, AV10856x, AV20476, AV4856DN
- Avigilon 12W-H3-4MH-DC1, 9C-H4A-3MH-180
- AVYCON AVC-NBM81F180
- Axis P3705, Q6010-E, Q6100-E
- Bosch FLEXIDOME multi 7000i
- Dahua PDBW82041P-B360-x, DH-IPC-PFW8840N-A180, DH-SDT5A405WA-4F-B, DH-IPC-PFW8840-A180, DH-SDT5X405-4F-WA, DH-TPC-DF1241x
- ENS Security SIPSP5x
- Hikvision DS-2DP0836x, DS-2DP3236x, DS-2CD6825x, DS-2TD2637x, DS-2CD6D52G0x, DS-2CD6924G0-IHS
- IC Realtime IPEL-M80V-IRW1
- IndigoVision SP-20MP-MS-360
- Interlogix TVS-5101
- LTS LTDHIP39222W-28ISM
- Sonitrol SN-2M-CPIR-IAW-PGI
- Vicon V1020-WIR-360

Advanced PTZ Support:

- Digital Watchdog DWC-MPTZ230XTW
- Avigilon 15C-H4A-3MH-180, 32C-H4A-4MH-360, 9C-H4A-3MH-270, 12W-H3-4MH-DP1-B, 12C-H4A-4MH-360
- Axis P3727-PLE
- Bosch 9000i, AUTODOME IP Starlight 5100

- Canon VB-H45, VB-R12VE, VB-R13
- Dahua IPC-HDW8341X-3D-S2
- GNS NCA08-4M
- Hanwha PNM-9080VQ
- Hikvision DS-2DE2A404IW-x, DS-2DF8442IXS-x, DS-2DP1636Z-D
- Honeywell HM4L8GR1
- IC Realtime IPEL-MB80F-IRW1
- Milesight MS-C2941-X42x
- Panasonic WV-S6131, WV-X8571
- Redvision RVX2
- Tyco IFS16-M10-BT03

Encoders Added to the Analog List

- 3S Vision S2071
- Advidia VP-16-V2
- Amcrest NV4432E-HS, AMDV8M4-H5, AMDV10818-S4
- ANNKE DN41R
- Antrica ANT-35000H1
- ATV IPE1CH
- Benelink DFT6008, DFT6016FA
- Bosch VIP X16 XF E, VIDEOJET-X40, VIDEOJET-X20
- CBC Ganz DR-16M52
- CP PLUS CP-UNR-4K2161-V2
- C-Q-IT NVR-S1V8P8-LS2
- Dahua DHI-NVR52A16-x, C52A1N2, DH-XVR5432x, DH-NVR4416-16P-4K, DHI-NVR4216-8P-4K, DHI-NVR4432-16P-4K, DHI-NVR5416-16P-4KS2, DH-XVR5116HS-x, DHI-NVR4208-8P-I, X82B3Ax, DH-HCVR5432L, DH-XVR5216x, DHI-NVR4204x, X72A2A3, C52A3N, DH-HCVR4104HS-V3, DH-HCVR4108HS-V3, DH-XVR7208x, DHI-NVR5416-16P-4KS2E, N42B2P, X72A3A, X82R2A2
- Dayou UNVR-J3324
- Digimerge DV908, D841A8

- Eneo MAM-5ME1001MTA, MHR-28N08005A
- ENS Security ED-DVS1401E
- e-VisionAI16UNITP
- Hikvision iDS-7208HQHI-x, iDS-7216HQHI-x, DS-7116x, DS-7208x, DS-7316x, DS-7332, DS-7616x, DS-7716x, DS-7732x, DVR-104G-F1, DVR-216G-F1, ERT-F204, iDS-7204HQHI-M1/S, iDS-7208HQHIx, iDS-7216HQHIx, DS-7232x, DS-9616x, IP-32CH-x, DS-7324, DS-7632x, NR32P8-8
- Hinovision NVR508P8-I2
- Honeywell HEN081, HRHT416x, HRHT408, HEN643x, HRHQ116x, HRHT404x, HEN321x, HEN04103
- Hunt CCTV HAR315-4
- IC Realtime BREEZE-6S2-108
- Inaxsys INS321644x
- IntelBras MHDX 1016, MHDX 1116, MHDX 3016
- Interlogix TVE-1610, TVR-1216HD
- InVid UN1B-8X8, UD1B-8
- Kiloview E2
- KTC EZHD-TVF32
- Lorex N881A6, NR916X,D861A8, LNR632, N882A6, NR908X
- LTS LTD8304T-ET, LTD8316T, LTD8504, LTN8708K-P8
- Luma Surveillance LUM-510-NVR-16CH
- March Networks Edge 8e HD
- Moxa VPORT 461x, VPORT 461A
- Norelco SC-A314-8TVI-2TB
- Ocean CCTV DR-TW1508E
- Osiris' NVR-32FD-H2L-4K
- Pelco NET5404T
- SCW NVR-VGP16P16
- Security System Depot TVI-7208-K1-5MP
- Securtex Digital SD-2162x

- Space Technology ST-HDVR-8 TVI PRO
- Tecsar Lead 16CH2H-5-1U
- Tescom Japan TNV-7616N 2TB
- Telestar TD2510
- Tiandy TC-R3120x
- ToughDog Security TDNVR24P24KS
- TVT TD-1401E
- Unimo UNVR-J3326, UDR-JA1604
- UniView NVR202-x, NVR302-x
- Vivotek VS8100-v2, VS8100x
- Wonderex WTR-2008-x
- YecVoz T1-TVI08
- Vanderbilt CRDN1610-PA
- Videcon VUHDIPLx
- Vicon ENC-H264-16
- Visiotech XS-NVR3108-4K8Px, XS-NVR3108-x, XS-XVR6116-4KL-HEVC

Fixed Issues

DW Devices Fixed Issues

- Changes in Imaging settings (Camera Settings > Advanced) on DWC-PVX16W did not get saved. Fixed.
- DW cameras sometimes produced the error "No data received during last 0 seconds". Fixed.

Third-Party Devices Fixed Issues

- New system setting and general improvements to HTTPS cameras:
 - Some cameras did not work in the HTTPS-only mode. Fixed.
- VIVOTEK analytics plugin:

- Configured crowd detection areas were incorrectly applied on the web interface for Vivotek cameras. Fixed.
 - The server did not apply height and angle values to VIVOTEK cameras after they were factory reset. Fixed.
 - The server's maximum height value overwrote the camera's installation height set on the camera's webpage. Fixed.
- Hikvision analytics plugin:
 - Fixed an issue with Hikvision DS-2CD4A26FWD-I/S/P where the first license plate detected after midnight did not appear in the desktop client. Fixed.
 - Timestamps were parsed incorrectly for LPR events, causing inaccurate bookmarks and thumbnails in Emails and the Notification Panel. Fixed.
 - Analytic event rules did not work for Hikvision DS-2CD3T56G2-4IS. Fixed.
- OpenVINO showed up in System Administration but not in Camera Settings. Fixed.
- A camera firmware bug caused misleading Plugin Diagnostic Event notifications for "Metadata streaming failed" to appear in the Notification Panel. Fixed.
- Fixed an issue with Sanyo cameras that were added as an RTSP stream.
- Fixed an issue with the web page for Axis D2050 in Camera Settings.
- All settings except for Logical ID were disabled in the Expert tab for Axis speakers. Fixed.
- NR32P8-8 NVR failed to initialize. Fixed.
- The Desktop Client crashed immediately after launching if the Axis T8311 joystick was plugged in. Fixed.
- Added Axis Q6010 to the multi-sensor cameras list.
- Enabled ONVIF by default on ACTi A71 cameras to fix intermittent disconnections that occurred when using the ACTi API.
- Hikvision DS-7232HQHI-K2 failed to initialize. Fixed.
- Turning on auto-discovery after manually adding Milesight MS-C2962-FPB resulted in a duplicate on the server. Fixed.
- Some Canon camera models had an RTSP CSeq limit that caused live streams to intermittently stop. Fixed.
- Fixed an issue with zoom control on FSN camera.
- DAHUA ITC237-PW6M-IRLZF-C2 failed to initialize. Fixed

- Fixed an initialization issue with Vivotek SD9366-EH-v2.
- The output from an Advantech ADAM-6060 I/O unit was not triggered by the event rule if it has never been placed on the grid after server restart. Fixed.
- Fixed an issue with Panasonic WV-S6130 configuration.
- Maximum FPS was lower than expected on Pelco IJV522-1ERS. Fixed.
- Avigilon 12W-H3-4MH-DC1 did not function properly and received the "No data received during last X seconds" error intermittently when streaming over RTSP. Fixed.
- Hikvision DS-6704HUHI now uses ONVIF PTZ by default.
- PTZ tours would get stuck at the first preset on Hanwha SNP-6320. Fixed.
- The number of available Motion Guard and Fence Guard profiles did not match the number of Axis cameras with configured profiles. Fixed.
- Due to an HTTP issue on AXIS Q6100-E, connected Servers had issues enabling recording on that model and saving changes in System settings. Fixed.
- Some Dahua OEM cameras were not recognized as Dahua cameras. Fixed.
- VIVOTEK cameras experienced the GetProfiles Error regardless of forcing ONVIF media1 or media2. Fixed.
- PTZ preset point and call execution did not work correctly on ACTi B26. Fixed.
- There was a slight difference in the zoom window view between the exported file and archive of Milesight MS-C9674-PB (fisheye). Fixed.
- Win4net-related requests will no longer be sent to non-Win4net cameras.
- Hikvision NVR DS-7732NI-14/16 could not properly connect to the server due to an ONVIF issue. Fixed.
- Added support for Hikvision analytics to HiLook IPC-T260H OEM.
- Fixed an issue where the server could not play RTSP streams from Delta Encoder by fixing an initialization issue and enabling NAT traversal for UDP streams..
- Vivotek FD9387-HTV-A sent a broken h265 stream to the Server. Fixed.
- The Server would drop the channel 2 RTSP stream for Dahua DH-TPC-BF1241 due to an ONVIF PTZ misconfiguration. Fixed.

Bug Fixes

- Adding permissions for web pages via drag-and-drop in Resource Tree did not work. Fixed.

- Bosch cameras with Motion+ enabled would detect false objects when on the most recent firmware version. Fixed.
- A web page's state was not saved after switching to another layout and back. Fixed.
- The "Log In" button on the Desktop Client's cloud login dialog was disabled after only one unsuccessful attempt. Fixed.
- Vendor and model information was visible in Camera Settings for cameras added as RTSP streams. Fixed.
- Fixed an issue where user accounts with special characters in their names could be created.
- State of the "connect to the previous system on startup" checkbox was reset on logout. Fixed.
- The in-client web browser displayed some fonts incorrectly. Fixed.
- F2 hotkey did not work in the Desktop Client on Mac computers. Fixed.
- The warning "Some files may be deleted soon after uploading" appeared incorrectly when new files were uploaded to an existing virtual camera. Fixed.
- Motion files belonging to a removed archive were visible in the Notification Panel. Fixed.
- The Desktop Client did not prompt the user to restart when "Maximum Live Buffer" was toggled in Local Settings. Fixed.
- Using arrow keys to navigate through the Resource Tree on the Desktop Client did not work properly. Fixed.
- Filtered notifications were still shown in the Notification Panel. Fixed.
- Some cameras did not switch to dewarping mode after Dewarping was enabled in Camera Settings. Fixed.
- Watermark size was incorrect for some cameras. Fixed.
- The "Deactivate" button was shown for Video Wall trial licenses. Fixed.
- Fixed an issue where motion sensitivity could not be changed in the areas with zero sensitivity.
- Scheduled soft triggers could not be activated if the Desktop Client and Server time were different. Fixed.
- The value in the "Display for" field for Showreels could not be changed using the keyboard. Fixed.
- There was no text copy button in the Edit Streams dialog. Fixed.

- Fixed an issue with how backup files are stored when free disk space is less than 10 GB.
- The status indicator on cameras in the Resource Tree took longer than expected to update after recording was turned on/off. Fixed.
- Gaps in recording occurred when "Additional frame processing delay" was set in an analytics plugin. Fixed.
- Some Hikvision cameras generated the wrong timestamp on bookmarks for LPR events. Fixed.
- The Desktop Client would freeze and crash when the Web Page tab in Camera Settings was opened for some Hanwha cameras. Fixed.
- Some events repeat several times in the Notification Panel. Fixed.
- Archived video file paths contained improper characters in the log file. Fixed.
- The Timeline's scale was not saved when switching between a newly added camera and an existing camera that was open beforehand. Fixed.
- The playback of opened bookmarks started in an incorrect position if Web Pages were open beforehand. Fixed.
- The Server would crash if a corrupt file was in the archive. Fixed.
- The Server sent an unsupported FPS value to PELCO P2230L-ESR, which caused the initialization process to fail. Fixed.
- The hotkey to enable full screen mode was changed from CMD + F to CMD + CTRL + F on Mac computers.
- The default rotation value was not applied for the item if it was dragged directly to the Video Wall screen in the Resource Tree. Fixed.
- Shared folders with guest access could not be added to the Server as external storage. Fixed.
- The Resource Panel and Notification Panel would overlap items open on the scene when the Desktop Client window was too small. Fixed.
- The @ character could not be used in the in-client web browser on French keyboard layouts. Fixed.
- Canceling a video export generated a TMP file in the export directory. Fixed.
- Camera Settings > Web Page did not work for Hanwha cameras on Hanwha NVR. Fixed.
- Mac computers experienced high CPU load when the Licenses tab in System Administration was opened. Fixed.

- The Server crashed when trying to add external storage if there was a space in the computer name portion of the directory. Fixed.
- The Desktop Client crashed when the last layout in the Navigation Panel was closed. Fixed.
- A UI glitch occurred when the User Roles dialog size was maxed out while before creating new roles. Fixed.
- In the Web Admin, reloading any page in the Information tab would load the Alerts page instead. Fixed.
- The wrong error message was displayed when password-protected external storage was added without credentials on Windows. Fixed.
- Disabling Fisheye Dewarping on a newly added camera would rotate the stream on a Video Wall. Fixed.
- Live streams from the Server looked worse in the Desktop Client than in VLC. Fixed.
- The archive integrity check alert failed to trigger when trying to playback missing files. Fixed.
- Showreels and tours continued cycling while 2-way audio or software triggers were pressed. Fixed.
- The "Export failure" error message did not appear if a connection failure occurred. Fixed.
- The mouse cursor would sometimes jump over footage when switching playback speed. Fixed.
- Fixed an issue where some previews failed to load when using Preview Search.
- Footage from the "Device recording" event missed frames for about one second when pre/post-recording was set. Fixed.
- Server monitoring was available in Resource Tree for users that lacked the appropriate permissions. Fixed.
- The on-screen keyboard would sometimes not appear when interacting with the Desktop Client on Ubuntu computers. Fixed.
- Archive and live streams were limited to 60 FPS instead of the camera's full streamed FPS value. Fixed.
- Files exported with the MPEG Audio layer 1/2 (mpga) codec have no sound during playback in the Desktop Client. Fixed.
- After upgrading from VMS 4.0 to 4.2, fast archive scans took over an hour and reached maximum USB storage utilization. Fixed.

- Export failed if the camera name contained the "new line" symbol. Fixed.
- Memory leak occurred during reverse playback. Fixed.
- The server configured TP-Link Tapo C200 to exceed its supported bitrate. Fixed.
- The Intel® RealSense™ Depth Camera D415 (USB camera) caused the Server to crash. Fixed.
- 2-way audio did not work if a custom media port was set. Fixed.
- The server used incorrect encoding on emails in non-Latin languages. Fixed.
- Fixed an issue that prevented two Hikvision cameras with identical IP addresses on different networks from being added to a cloud-connected system.
- The login error "Incorrect Username or Password" occurred when trying to log in after LDAP users were moved to a different OU. Removing and adding the LDAP users did not resolve the issue. Fixed.
- Using a search filter prevented multiple LDAP users from being imported all at once. Fixed.
- Live streams at 8K resolution would freeze when opened in the Desktop Client due to excessive CPU usage. Fixed.
- Strange mouse cursor and archive playback behavior occurred in the Desktop Client when interacting with the Timeline. Fixed.
- The Server sent a faulty HTTP header when requesting MJPEG video from the archive. Fixed.
- PTZ controls on Speed Dome cameras did not work correctly. Fixed.
- Compressed video frames passed from TestCamera to a plugin created a broken file that did not contain a video stream. Fixed.
- Rewinding archived video at high speed with motion search enabled caused excessive memory consumption. Fixed.
- Live streams in the Desktop Client would exhibit video rubber banding issues. Fixed.
- Cloud merge did not work in LANs with port 443 open and port 80 blocked. Fixed.
- In laptops with dual GPUs, the Desktop Client will default to using the discrete GPU instead of the integrated GPU.
- The Desktop Client used a case-sensitive search when selecting a virtual camera folder to upload, which caused the action to fail with the error "No video files found in selected folder". Fixed.

- The FPS shown in the recording schedule did not match the FPS value saved in settings. Fixed.
- Some cameras did not stream in high resolutions when Intel® QuickSync was enabled in the Desktop Client. Fixed.
- Server does not ignore the first stop event for prolonged events. Fixed.
- Hikvision H.265 camera streams could not be viewed from the WebAdmin and Cloud Portal. Fixed.
- Live stream was delayed for 2-3 seconds delay if objects tab was opened. Fixed.
- The Server would not trigger "Camera Disconnected" notifications for manually added cameras. Fixed.
- Video export failed if the user had special characters in their account name. Fixed
- Administrator can now restart server via web-admin.

API/SDK Changes and Fixes

- A new Server HTTP API has been introduced, designed in RESTful style instead of the RPC style of the old HTTP API.
 - Features missing from the new API are still covered by the old API and will be added to the new API over time.
 - The old API will be supported for several upcoming VMS releases but may become officially deprecated in a future version.
 - The Server WebAdmin now includes documentation for the new API.
- /api/systemSettings is now available only for the system owner and administrators.
- Added GET and POST handler support to the Server for "/api/createEvent" requests.
- Subsections within analytics sections did not show up on the Plugins tab in System Administration. Fixed.
- The Server parameters "motionType" and "backupDaysOfTheWeek" were incorrectly represented in JSON. Fixed.
- Added an option to allow ec2/cameraThumbnail to retrieve the stream's live image.
- Introduced the defaultRemovableDriveState VMS server configuration parameter to replace allowRemovableStorages.

Known Limitations

- Scrolling in WebPage items works very slow.
- It takes a long time to open a camera's Web Page.
- Some ACTI cameras are not auto discovered via HTTPS.
- Some AXIS cameras cannot be added to the Server if the "People Counter" app was installed on it.
- The video from the same NVR channel cannot be played in two instances of the Desktop Client (or browsers) simultaneously.

Tested Operating Systems:

- Windows 8.1, 10/Enterprise, 11, 2008 R2, 2012, 2012 R2, 2016 v1607, 2019, 2022
- Ubuntu LTS: 16.04, 18.04, 20.04
- MacOS: 10.15 (Catalina), 11.0 (Big Sur), 12 (Monterey)

Installation File Resources

Important Notes

When upgrading from a previous major release version, please consider the following:

- If upgrading from DW Spectrum version 4.x, you may upgrade directly to build version 5.0
- If upgrading from DW Spectrum version 3.2 or older, your recommended upgrade options include:
 - Delete v3.2 and fresh install of DW Spectrum IPVMS v5.0
or
 - Use the following upgrade path:
 - i. First, upgrade from build v3.2 directly to build v4.x
 - ii. Then upgrade from v4.x to v5.0

Additional Recommendations

When upgrading major release versions, like from v4.x to v5.0, it is highly recommended to clean up the database by backing up and restoring the database files after upgrading.

To do so after upgrading to DW Spectrum IPVMS v5.0:

- 1) After upgrading to v5.0, backup DW Spectrum System database.
- 2) Delete all database files.
- 3) Restore the database using the backup that was created previously in *Step 1*.

In-Client Upgrade Information

- **Build Number:** 35746
- **Password:** t531vl

****NOTE:** If your DW Spectrum System is upgrading from a previous Windows x64 Client/Server Bundle, be sure to continue using the bundled version. Updating by installing the Client or Server software separately can cause your computer to host multiple versions of the DW Spectrum software and may create issues.

For More Information or Technical Support

DW Technical Support:

Toll-free: 866.446.3595

<https://www.digital-watchdog.com/contact-tech-support/>

866.446.3595

sales@digital-watchdog.com

www.digital-watchdog.com