Video Management Anywhere, Anytime.



Complete Scalable Video Management



Built for Users."

AP

Apps for every operating system. Cloud-enabled.

DW Spectrum[®] IPVMS supports all major operating systems with the ability to link any system to DW Cloud[™] for fast, reliable remote access.

Automated. Intuitive. Built for Users.

Installs in seconds configures in minutes. Instantly usable for novices, operators, integrators, or developers.

Auto-discover devices from hundreds

of manufacturers.

Discover and manage thousands of compatible video, audio and I/O devices. Set up a new system or replace any existing VMS in minutes.

Open for developers. Integrate anything.

With an open Restful API, a suite of SDK's, and integrator-friendly tools like a built-in API generator DW Spectrum^{*} IPVMS users can quickly integrate any 3rd party device or system.





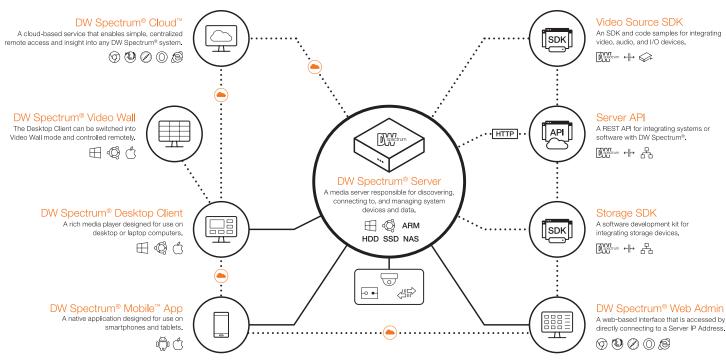
Spectrum

·

SDK

DW Spectrum[®] IPVMS is an endlessly customizable IP Video Management platform that gives users the ability to create tailored networked video solutions for any type of project, for use by anyone, on any device.

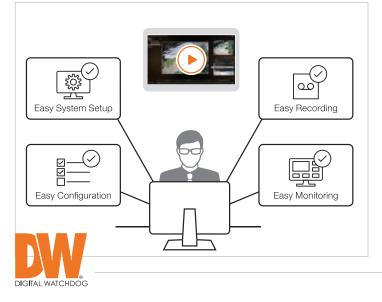
Open architecture / cross platform.



Open Architecture

- Now with DW Cloud[™], connect from anywhere to share access instantly.
- Now with even more device support.
- Support of thousands of devices including cameras, encoders and I/O modules from leading manufacturers.
- Support cameras at every resolution.
- Built-in API allowing managed video to be accessed and reviewed by any willing 3rd party device.

Interface is dramatically easier to use.



Cross-Platform

- DW Spectrum's recording engine runs on Windows[®] and Linux[®] Operating Systems.
- Client software is Windows, Linux, or Mac[®] compatible.
- Mobile apps are iOS[®] and Android[®] compatible.
- Web client is compatible with Google Chrome[®], Firefox[®], Safari[®] and Internet Explorer[®].

Highly refined GUI

Viewing Video

- Seamless transitions.
- Customizable camera layouts.
- Zoom, create regions of interest and enhance images.

Searching Video

- Fastest video search in the industry.
- Users can bookmark specific video segments.

Downloading Video

Multiple download options.

Storage backup.

System Programming

- Intelligent high definition multi-streaming video management with no user programming required.
- Server and system programming from a single interface.

Advanced Features

- Interactive mapping, alarms, events/notifications, universal fisheye de-warping from a single interface.
- External alarm events can be delivered right from the IP camera or via network I/O modules.

Stay current with all $\mathsf{DW}^{\texttt{e}}$ solutions at: www.Digital-Watchdog.com

Enterprise features are standard.

- Custom User Role Management: create custom roles and share groups of hardware and layouts.
- Multi-Server and Centralized Management
- Health Monitor: provides real-time insight of camera and server status.
- Video Storage Analytic: insight into storage requirements each camera is using in real-time and forecasts the impact of additional storage.
- Minimize Video Recording Loss: includes failover to protect video recordings from hardware failures and network interruptions.
- LDAP/Active Directory integration for enterprise-wide user management is standard.
- Video Wall users can create and remotely manage remote monitors with just a few clicks.
- Part of a complete end-to-end IP solution.

Although DW Spectrum IPVMS is open to be deployed on a vast number of solutions. It is also part of DW's complete end-to-end IP solution, with Blackjack[®] servers and Blackjack[®] NAS storage solutions.

Lifetime upgrades included/no annual agreements.

While other companies require annual maintenance agreements, DW Spectrum IPVMS system upgrades are always available free of charge.

Scalable from one to thousands of devices.

The unified user experience for applications requiring one or thousands of cameras is deployed at thousands of locations worldwide, making DW Spectrum the industry's fastest-growing VMS on the market today.

You choose your devices.

DW Spectrum[®] has applications for all major operating systems so our users are not limited by what device or operating system they choose to use on their desktops, mobile devices, rack mount servers, or even low-powered embedded devices.

| Server | Client | Cloud | Mobile |
|--|---|---|---|
| A media server responsible for discovering, connecting to, and managing system devices and data. | A rich media player designed to view and manage a single DW Spectrum system from a desktop or laptop PC. | A cloud-based service that enables simple, centralized remote access and insight into any DW Spectrum system. | A mobile app designed for viewing DW Spectrum system video and events while on the go. |
| SERVER OS SUPPORT: | DESKTOP OS SUPPORT: | SUPPORTED BROWSERS: | MOBILE OS SUPPORT: |
| E O | 📢 🥝 🍊 | Chrome 😔 Firefox Control Safari | Google Play |
| | | O Opera | |

End-to-End Solution



Enterprise Scalability



spectrum[®]



Easy Configuration



Video Wall Control



Discover. Manage. Control. Integrate.

The DW Spectrum IPVMS media server application is a lightweight, powerful media server responsible for discovering, connecting to, and managing DW Spectrum IPVMS system devices and data. The application is pre-loaded on all Blackjack[®] servers.



Designed and Commissioned in the U.S.A.



Pre-loaded Blackjack servers

SUPPORTED OPERATING SYSTEM:

Windows®



Intel Quick Sync Video

| DISCOVER | MANAGE | VIEW | INTEGRATE |
|-------------------------------|-----------------------------|--------------------------------|---------------------------------|
| IP Cameras (ONVIF, Custom) | IP Cameras / NVRs / DVRs | Live Video (adaptive) | ↓↓ HTTP Generic Events |
| RTSP / HTTP Streams | Advanced Routing | Recorded Video (adaptive) | ↑↑ HTTP Request-as-an-Action |
| 1/O Devices | Storage (HDD/NAS/DAS) | Server Health | Server API |
| Samba NAS | Events and Rules Engine | Log Files | Storage SDK |
| Virtual Camera | Failover | Audit Trail | (SDK) Video Source SDK |
| H.265 on ONVIF Cameras | ⊶ Cranscoding | Storage Status | Any Device or System |
| Webcam Support | Failover on Storage Failure | Dual-Stream RTSP | C2P Integration |
| | System Update | Layout-as-an-Action | Metadata SDK |
| | | Health monitoring Dashboard | Plugins |



SCALABILITY

OF CLIENTS PER SERVER: THOUSANDS # OF CLIENTS PER SYSTEM: UNLIMITED # OF STREAMS PER SERVER: 128

OF SERVERS IN A SERVER SYSTEM: 50 *

* 50 is recommended maximum. Depends on server configuration and network environment.

Contact support for more info.

SUPPORTED OPERATING SYSTEMS

WINDOWS

Windows 8 Windows 8.1 Windows 10 Windows Server 2012 R2 Windows Server 2016 Windows Server 2019

LINUX



Ubuntu 16.04 LTS "Xenial Xerus" Ubuntu 18.04 LTS "Bionic Beaver"

BLACKJACK[®] SERVER WEB ADMIN



SUPPORTED MEDIA STREAMING

LIVE STREAMS (Viewed in DW Spectrum® Desktop)

VIDEO: H.265 H.264 MJPEG

AUDIO: AAC PCM (Mu-Law, A-law) g726 MP3

LIVE STREAMS (Available to pull from DW Spectrum $^{\circ}$ IPVMS media server to 3 $^{\rm rd}$ party)

VIDEO: H.265 H.264 MJPEG WebM

AUDIO: AAC PCM (Mu-Law, A-law) g726 MP3

PROTOCOLS: RTSP MJPEG WebM HLS

AUTOMATIC CAMERA FAILOVER: ~1 min. configurable

TRANSCODING: Supported (for web, client, mobile, API)

DATABASE: SQLITE + proprietary archive index

SINGLE SIGN-ON: LDAP/active directory

SECURITY: OPEN SSL, SALTED MD5 HASH, TLS/SSL, HTTPS

DEV TOOLS: Server API (HTTP), video source SDK, storage SDK NAS: ISCSI





Dramatically easier to use with almost immediate video load.

A rich media player with a flexible grid interface, unmatched speed and responsiveness, instant event notifications, an embedded browser, and a user experience, unlike any other video management software.



Video Wall users can create and remotely manage remote monitors with just a few clicks.

One App. Many Features.

DW Spectrum[®] IPVMS client combines performance, ease-of-use, and a 'let the user decide how best to use the software' approach into a single cross-platform lightweight app capable of running any server.

SUPPORTED OPERATING SYSTEM:

Windows®



MacOS

| USABILITY | | | MEDIA | COr | NFIGURATION | | SEARCH |
|-------------|-----------------------------------|----------|---|-----------|--------------------------------|---|------------------------|
| o B | Drag and Drop | | IP Cameras / Encoders / DVRs | | Events and Rules Engine | Ð | Smart Motion Search |
| \triangle | Consolidated Notifications | <u>A</u> | RTSP / HTTP Streams | Å. | User Management | | Keyword Search |
| à | Flex Timeline | | I/O Devices | | IP Cameras / Encoders | | Calendar Search |
| | Customizable Layouts | www | Web Pages | | Server Management | | Time-Slice Search |
| and a | Digital Maps | | Videos | Æ3 | I/O Device Management | | Bookmarks |
| | Adaptive Scaling | | Images | <u> P</u> | Storage Management | | Audit Trail |
| | Minimum Grid Size on Layouts | | Secure Export | | Add Device | | |
| | Resource Panel | | Chromium Browser In-Client | | Custom Watermark over Video | | |
| | Launch Desktop Client with CLI | NEW | Native Support for MEGApix® IVA/IVA+ | | Video Wall Failover | | |
| | Notifications Panel | | Fisheye Dewarping Precision | | | | |



MAXIMUM # OF GRID ITEMS

64 BIT OS: 64 Items (e.g. 64 live streams) 32 BIT OS: 24 Items (e.g. 24 live streams)

SUPPORTED OPERATING SYSTEMS

WINDOWS



Windows 8 Windows 8.1 Windows 10 Windows Server 2012 R2 Windows Server 2016 Windows Server 2019

LINUX



Ubuntu 16.04 LTS "Xenial Xerus" Ubuntu 18.04 LTS "Bionic Beaver"

MAC



macOS 10.14 "Mojave" macOS 10.15 "Catalina" macOS 11.0, 11.1, 11.2 "Big Sur"

HARDWARE REQUIREMENTS

CLOUD CONNECT

HARD DRIVE: HDD RAM: 2GB CPU: Quad-Core Intel 7 CPU or higher

GRAPHICS: Intel HD Graphics 3000 w/ Open GL2.1 support NETWORKING: 1GB NIC

PERFORMANCE SPECS

HARD DRIVE: Performance SSD RAM: 16 GB RAM CPU: Intel Core i5 GRAPHICS: NVIDIA GeForce GTX 1050 (Open GL2.1 support is required) NETWORKING: 1GB NIC

DW SPECTRUM[®] CLIENT APPLICATION



SUPPORTED MEDIA PLAYBACK ON GRID

LIVE STREAMS CODECS: H.265 H.264 MJPEG

OFFLINE MEDIA

VIDEOS: AVI MKV MP4 MOV TS M2TS MPEG MPG FLV WMV 3GP IMAGES: JPG PNG GIF BMP TIFF

| CONNECTED DEVICES |
|-------------------|
|-------------------|

| I/O DEVICES: Status and triggers |
|-----------------------------------|
| SERVERS: Server health monitoring |
| |

BROWSER

WEB PAGES: Responsive websites / progressive web apps

VIEWING MODES

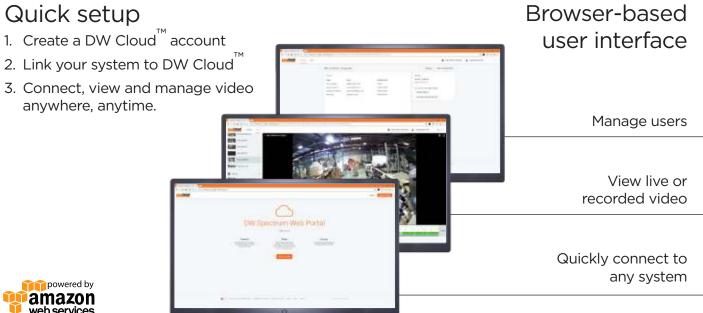
- MEDIA PLAYER: View, edit, and export offline videos and images
- CONNECTED: View, configure, and manage any DW Spectrum[®] IPVMS System
- VIDEO WALL: Put DW Spectrum[®] Desktop into VideoWall mode to control remotely
- SHOWREEL: Fully customizable timed viewing tour of any GRID media





DW Cloud[™] Simplifies Everything.

The DW Cloud[™] service makes connecting to and managing DW Spectrum[®] IPVMS system(s) simple. Set up in seconds. Connect from anywhere. Share with an unlimited number of users.





DIGITAL WATCHDOG

Connect. View. Manage. Scale.

DW Cloud[™] is a public cloud application hosted on Amazon AWS that enables simple remote connectivity, streaming and management of one or an unlimited number of DW Spectrum' IPVMS systems.

| SUPPORTED BROWSERS: | chrome C Microsoft | 🜔 Opera 🛛 🕹 Firefo | ox 💋 Safari |
|-----------------------------|------------------------------|--------------------------------|------------------------------|
| CONNECT | VIEW | MANAGE | SCALABILITY / INTEGRATION |
| NAT Traversal | Live Video (adaptive) | Server Settings | Unlimited # of Systems |
| Data Proxy via AWS | Recorded Video (adaptive) | User Settings | Unlimited # of Users |
| Simple Credentials | Camera Details | Cloud Connections | Unlimited # of Devices |
| Encrypted Communications | Keyword Search | Email Notifications | Cloud API |
| Wi/LAN/WAN | Calendar Search | Cloud System Merge | |
| 4G / LTE / Data | Flex Timeline | Health Monitoring Dashboard | |
| | | License Management | |
| | | Camera Settings | |

SCALABILITY

OF CONNECTED SYSTEMS: UNLIMITED # OF USERS: UNLIMITED

DW CLOUD[™] SERVICES

CLOUD CONNECT

?

Connect any DW Spectrum^{*} IPVMS System to DW Cloud[™] for simple remote connectivity from anywhere using NAT Traversal and Cloud Data Proxy technology.

Add an unlimited number of users to a single DW Cloud[™] system.

Share access to your DW Cloud[™] system in seconds using only email addresses.

Create custom roles to simply and quickly assign access to multiple DW Cloud[™] connected systems.

DEVELOPER TOOLS

CLOUD API: AVAILABLE UPON REQUEST

DW CLOUD[™] BROWSER & DEVICES INTERFACE



DW CLOUD[™] FEATURES

CONNECTIVITY

NAT TRAVERSAL: Connect directly to proxied Blackjack^{*} servers CLOUD DATA PROXY: Connect via AWS cloud proxy service

INTERFACE TABS

SYSTEMS: View connected system tiles

SETTINGS: View users, rename systems, disconnect systems

VIEW: USE DW Cloud™ to view live or recorded video

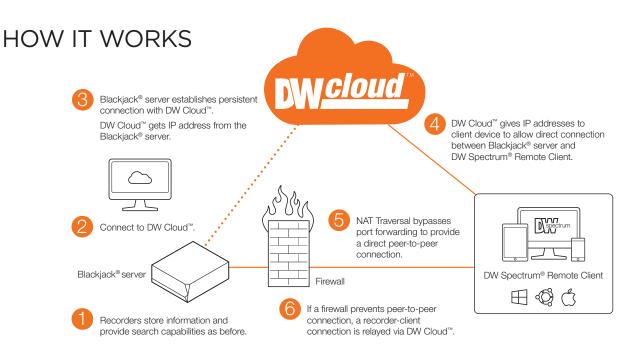
SECURITY

SECURE PASSWORD RECOVERY: Via email

HTTPS: Open SSL, encrypted server/client/cloud connections

EMAIL: (transport layer security)

PASSWORDS: Complex, multi-level hash





Smartphone or tablet. Smart video.

DW Spectrum Mobile for iOS and Android smartphones and tablets provides fast, dependable mobile access to any DW Spectrum IPVMS system.



View, playback and capture still images from a surveillance system on your smartphone and tablet.

Connect. View. Search. Control.

DW Spectrum Mobile - with a custom-developed media player - is a low-latency, user-friendly mobile application for iOS and Android devices that allows users to connect to, view, search, and control IP cameras over wifi or data networks.

SUPPORTED OPERATING SYSTEM:

Germon Google Play





COMPATIBLE DEVICES

SMARTPHONES:

64 Items (e.g. 64 live streams) iOS 24 Items (e.g. 24 live streams)

SUPPORTED OPERATING SYSTEMS

ANDROID

iOS



Android 5.0 "Lollipop" Android 6.0 "Marshmallow" Android 7.0, 7.1 "Nougat" Android 8.0, 8.1 "Oreo" Android 9.0 "Pie" Android 10.0 Android 11.0

iOS 10 iOS 11



iOS 13 iOS 14

iOS 12





DW SPECTRUM MOBILE



SUPPORTED MEDIA PLAYBACK

STREAMS

CODECS: H.265 H.264 HLS

FEATURES

REMOTE CONNECT: Login using local or DW Cloud[™] credentials LIVE THUMBNAILS: Thumbnails refresh in real-time KEYWORD SEARCH: Search for cameras or layouts by name CALENDAR SEARCH: Search by date and time ADVANCED PTZ: Point, pan, zoom, tilt controls, move to presets FISHEYE DEWARPING: Dewarp fisheye images ADAPTIVE SCALING: Hi / low resolution switching transcoding LAYOUTS: View thumbnails of system layouts

QUICK SYSTEM SWITCH: Quickly switch between multiple DW Spectrum IPVMS systems



Company Overview

DW^{*} empowers our customers as the industry-leading single source of value-driven complete solutions for all video surveillance applications.



Why choose DW?



Contact us:



California Office 16220 Bloomfield Avenue Cerritos, California USA 90703 Hours: 8:00am - 5:00pm PST.

Florida Office 5436 West Crenshaw Street Tampa, Florida USA 33634 Hours: 8:30am - 5:30pm EST.

| Phone (Toll-Free) | 1.866.446.3595 | | |
|---|----------------------------|--|--|
| Fax | 1.813.888.9262 | | |
| Customer Service (U.S.) | 1.866.446.3595 | | |
| Customer Service (International) | 1.813.888.9555 | | |
| Customer Service (French) | 1.514.360.1309 | | |
| Sales Email | sales@digital-watchdog.com | | |
| Tech Support Emailtechnicalsupport@digital-watchdog.com | | | |

