

Camera as a System™



Introduction

This brief provides Security Professionals with an overview of DW's Camera as a System (CaaS™) products that combine video sensor, video management system and recording storage into a single device.

There is a segment of the security surveillance market that until now has gone under served. This segment is the small business or residential client that requires extended recording of a limited number of professional quality cameras but cannot support the cost and technical overhead associated with larger server-based video recording systems.

Value proposition:

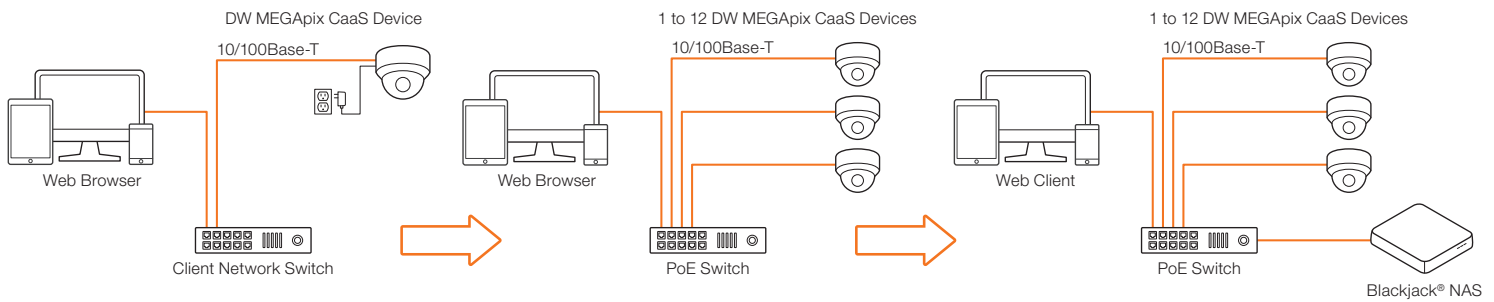
By combining the camera, recording storage and server software functions into a single device, an end user customer can have the same functionality in a single camera system as that of systems that utilize network video recorder / servers. With the DW's MEGApix® CaaS™ product line, simplicity does not require the client to sacrifice level of quality and functionality as is often the case with other standalone devices.

- 1. Professional Grade:** The cameras in these solutions have the same high-quality imaging, resolution and video processing functions as other DW® professional cameras.
- 2. Onboard Recording:** The 64GB and 128GB on board storage capacity of the MEGApix® CaaS™ devices provide local recording with no loss of quality.

- 3. Remote Access:** Unlike standalone cameras, the MEGApix® CaaS™ is a camera, recorder and web server all in a single device. Camera video can be reviewed and managed remotely using a common web browser.

- 4. Extended Recording:** When paired with a DW® Blackjack® Network Attached Storage (NAS) device, clients are no longer limited to short term video storage. Extended recording capacity is virtually plug and play.

- 5. Ability to Grow:** The use of MEGApix® CaaS™ and Blackjack® NAS means that the system can grow right along with the client's business and security needs. As the need for additional cameras arises, new MEGApix® CaaS™ cameras can be added. As the need for additional storage arises, additional NAS capacity can be added.



Start with a Single CaaS Camera and Grow the System along with Client's Needs

CaaS™ versus Local Recording

1. Local Recording: The ability to store video to a chip on board the camera is relatively common in the market place. Frequently, local storage is used as a backup when the camera is connected to a network video recorder. When used as a standalone camera (no NVR), viewing the stored data requires connecting the camera's memory chip to a computer or tablet as there is no method to view the recordings remotely. These limitations make local recording impractical for the following reasons:

- If the time before detecting an issue (missing inventory) exceeds the storage time, video is unavailable for investigations.
- Ability to playback stored video is cumbersome.
- Ability to verify recording quality is cumbersome. Reducing confidence that video will be usable when needed.
- Expansion of storage capacity requires an on-site NVR or off-site Cloud Storage provider.

2. Camera as a Server (CaaS™): MEGApix® CaaS™ devices include the functionality of a NVR within the camera. DW® MEGApix® CaaS™ cameras have the DW Spectrum® IPVMS storage and recording management software built into the device and total storage capacities of 64GB or 128GB. With MEGApix® CaaS™ several issues found with local storage cameras are removed:

- Storage capacity is increased from hours to days or weeks.

- Recorded video can be viewed over the network and stored to a computer drive.
- Recording setup and verification can be performed over the network.
- Expansion of storage capacity is achieved by simply adding a DW® Blackjack® Network Attached Storage (NAS) device.

CaaS™ versus DIY

1. Residential DIY: On the market there is a line of security devices that can provide the home user a relatively acceptable image. However, the quality of the cameras is often not on par with cameras installed by Security Professionals. The video resolution available on DIY cameras typically tops out at 1080p with many providing lower resolutions for video display. Additionally, very few of these cameras are constructed to resist damage from tampering or vandalism¹.

DW® MEGApix® CaaS™: DW® MEGApix® CaaS™ devices are built to the same video processing and durability specifications as is with all DW® products. With CaaS™ there is no need to sacrifice quality and durability in order to obtain simplified installation and recording.

2. DIY Networking: The typical home network is installed by the home owner using DIY networking products. While these products and the resulting network performance may be acceptable for everyday browsing and email, many homeowners are experiencing issues when attempting to watch content from video streaming services.



SOLUTIONS BRIEF: MEGApix[®] Camera as a System[™]

For example, Netflix recommends between 5 and 25 Megabits per second (Mbps) bandwidth to watch HD streaming video². With the increase of voice over IP (VOIP) for land line connections, the total bandwidth for everyday activity further increases. Why does this matter? Video cameras have very similar bandwidth requirements as that of a video streaming service and these cameras will be competing with computers, streaming video and VOIP for bandwidth both internally to the home and externally on the Internet provider connection. Depending on the video's resolution, framerate and scene activity the bandwidth required for each camera can reach 20 Mbps. A good test of the home network is to attempt to stream content from a video service (Netflix/Hulu/Amazon) to two or more devices in the house and see how much buffering and skipping occurs.

DW MEGApix[®] CaaS[™]: MEGApix[®] CaaS[™] devices store video locally within the camera, eliminating the demand for network and Internet bandwidth for recording. With MEGApix[®] CaaS[™], the client need not invest in a new network in order to add cameras.

3. DIY Cloud Storage: In many cases, the use of an off-site storage provider (the Cloud) can be a viable option. DIY cloud service providers allow the user to record video without the use of a NVR. Additionally, these providers give the user the ability to remotely view the cameras when away from home. However, with many of the DIY systems using a cloud provider is the only means to record or remotely view cameras. These cameras are locked down so that the user must use the services to get these features. There are factors that should be considered when considering these services:

- **Subscription Fee:** All remote storage and access providers charge a recurring fee for their services. Check to see if the camera supports the ability to connect to a local NVR or NAS for storage.
- **Internet Access Load:** As is with professional grade systems, the bandwidth required to transmit video internally and externally to the

facility must be carefully considered. As discussed earlier, the new cameras will be adding load onto the Internet connection that may already have performance issues during peak demand periods. Bandwidth utilization issues can be caused by the internal network and the Internet service provider connection. When using a cloud provider for storage and viewing the client's Internet connection must be assessed to verify it will meet the demands. A good test of the home network is to attempt to stream content from a video service (Netflix/Hulu/Amazon) to two or more devices in the house and see how much buffering and skipping occurs.

- **Network security:** With the increased use of IP connected devices, comes the increased incidents of unauthorized access to the client's network. While many of the DIY devices do come equipped with encryption, the need to ensure the network and the cameras are guarded against unauthorized access remains.

DW[®] CaaS[™]: CaaS[™] devices store video locally within the camera, eliminating the need to connect to the Internet for recording functions. With CaaS[™] the client need not sacrifice network performance and security to achieve video recording.

Technical Simplicity with MEGApix[®] CaaS[™]

- 1. Ease of Installation:** Installation of the CaaS[™] is the same as other DW[®] MEGApix[®] cameras. The cameras can be powered locally using an optional power adapter or via a PoE enabled network switch. MEGApix[®] CaaS[™] devices are available in both indoor and outdoor models and support multiple mounting profiles.
- 2. Browser Client:** With DW Spectrum[®] IPVMS Application built in as a web service on the camera, the client need only a web browser to access the web client on the camera. Additionally, the CaaS[™] is compatible with the DW Cloud[®] online management portal and Mobile[™] app.



SOLUTIONS BRIEF: MEGApix® Camera as a System™

3. Auto Configuration: Camera comes from the factory with all the default settings to make it plug and play. Using the camera's built-in DW Spectrum® web service, the MEGApix® CaaS™ can be customized to the client's needs.

CaaS™ Expandability

1. Network Attached Storage (NAS): NAS devices are a cross between a USB storage device and a mini server. Unlike the USB drive, the NAS is directly accessible from devices on the same network and the NAS has the drive storage and file management functions embedded. A NAS can contain single or multiple drives which can be configured to operate independently or as a redundant backup. The DW Blackjack® Network Attached Storage (NAS) can support up to 12 MEGApix® CaaS™ cameras and is expandable up to 140 TBs of storage capacity. The DW Blackjack® NAS can also be used with the DW Spectrum® IPVMS systems to expand the total capacity of DW Spectrum® IPVMS.

Conclusion

The DW® Camera as a System, provides Security Professionals new options to support the needs of smaller clients while continuing to use professional grade products. These new options also make it possible to compete with lower end DIY products.

The DW® MEGApix® CaaS™ product line offers the installation and operational simplicity of inferior DIY products while maintaining the same high standards for video quality, flexibility and durability.

The challenge in dealing with the perception that DIY security cameras are as good as professionally installed systems will most likely continue. However, with the flexibility that comes with DW® MEGApix® CaaS™ combined with technical expertise the Security Professional now has a competitive edge. By providing professional grade products, with low installation costs, and an easy to use system Security Professionals can continue to demonstrate their value to clients.

Online:

<https://digital-watchdog.com/page/caas-landing-page/>

Works Cited

¹ R. Edwards, "14 Best Home Security Cameras of 2018: Indoor & Outdoor," 22 January 2018. [Online]. Available: <https://www.safewise.com/resources/home-security-cameras>.

² C. Denison, "Banish the buffer screen with these tips for silky-smooth streaming video," 13 July 2014. [Online]. Available: <https://www.digitaltrends.com/home-theater/banish-buffer-screen-tips-get-best-streaming-video/>. [Accessed 12 February 2018].

DW®

DW® empowers our customers as the industry-leading single source of value-driven complete solutions for all video surveillance applications (HD over Coax™ / hybrid / IP enterprise), focusing on ease of use and ROI. DW® products offer technologically-advanced features including multi-sensor HD cameras at real-time 30fps, Star-Light Plus™ color in darkness technology, WDR, Smart DNR™ and Smart IR™. Complete IP megapixel surveillance solutions include single- and multi-sensor MEGApix® cameras and edge recording systems, Blackjack® NVRs and NAS devices, and DW Spectrum® IPVMS for server, mobile and on-camera control. Complete Universal HD over Coax® surveillance solutions include single- and multi-sensor Star-Light Plus™ Universal HD over Coax® cameras, VMAX® Universal HD over Coax® DVRs and mobile management applications.

