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AN EVOLVING THREAT LANDSCAPE

THERE ARE MANY CHALLENGES AND OPPORTUNITIES WITH CASINO SURVEILLANCE

Optimizing Surveillance Through Multi-Streaming

By Eddie Acosta

In the world of critical infrastructure utilities, transportation, energy, and water, the stakes are too high for outdated surveillance strategies. Security teams need a VMS that can adapt to demanding operational requirements, bandwidth constraints, and evolving compliance needs. Delivering the right video to the right person at the right time without overwhelming networks or sacrificing quality requires more than just additional cameras or storage.

Technologies like Multi-Streaming and Dynamic Resolution Scaling (DRS) are stepping in to meet that challenge, transforming how security teams handle video in the field and security operation center.This is not about adding more cameras or more storage. It is about smarter stream management.

UNDERSTANDING TECHNOLOGIES AND THEIR VALUE

Multi-Streaming allows a single camera to send out multiple video streams simultaneously, each with its own resolution and bitrate settings. This gives users the flexibility to tailor video access based on operational needs—for example, using a low-resolution stream for live monitoring or mobile access, and a high-resolution stream for forensic review or export.

CompleteView can be configured to automatically record the high-resolution stream during an alarm event for enhanced investigative detail, then revert to a lower-resolution stream afterward. The result is smarter bandwidth and storage management without sacrificing image quality when it matters most.

In settings, this ensures video is always available in the format best suited to the task — whether you are monitoring in real time, conducting routine checks or reviewing footage after an incident.

Dynamic Resolution Scaling (DRS) adapts video resolution in real-time based on system conditions. DRS automatically and dynamically resizes the video resolution at the Recording Server before transmission to the client application for viewing, thus saving significant network bandwidth. This processing occurs in the background without user intervention and without affecting the originally recorded video. Video is still stored on the recording server at the configured resolution.

MATCHING TECHNOLOGY TO THE NEED

To design efficient video systems, it's critical to know when and why each of these technologies applies.

Use Multi-streaming when:

- You need persistent, parallel access to different stream types (e.g., high-quality recording and low-bandwidth live view), often tied to user roles or operations. Multi-streaming enables custom stream assignment per camera, ensuring each user or system gets the right stream for their task.
- You need more control over stream delivery in hybrid or bandwidth-sensitive environments and want to record only one stream to save high-res video for critical events—reducing storage without sacrificing important footage.

Impact of DRS when:

- DRS delivers only the resolution needed for each viewing context, minimizing network load without compromising video clarity.
- By dynamically selecting lower-resolution streams for smaller displays or thumbnails, users experience faster load times and smoother playback.
- Supports efficient viewing across large, distributed systems by optimizing stream selection and preserving performance in multi-site environments.

REAL-WORLD IMPACT: SMARTER STREAM MANAGEMENT IN ACTION

Security teams across critical infrastructure sectors utilities, transportation, and energy are already applying these technologies to solve real challenges:

- **Live Monitoring with Minimal Lag:** A Security Operation Center uses DRS to ensure operators can view dozens of camera feeds without delay, even during peak hours.
- **Remote Site Efficiency:** Multi-streaming allows a regional water treatment facility to transmit lower-bitrate streams from field locations for live viewing while still retaining high-res footage locally for forensic use.
- **Scalable Deployments:** As organizations grow their systems, combining DRS and multi-streaming ensures they don't have to choose between video quality and system responsiveness.

Effective video stream management isn't about choosing between multi-streaming and DRS. It is about understanding how to use each to enhance visibility, optimize bandwidth, and improve response times.

As security operations evolve, the organizations that succeed will not just collect more video. They will deliver the correct video, at the right quality, exactly when it matters.

REDEFINING THE SECURITY PLAYBOOK

Success will not come from simply expanding hardware or increasing storage capacity; it will come from strategically managing video streams to meet both operational goals and real-world constraints.

Multi-Streaming and Dynamic Resolution Scaling are not competing technologies; they are complementary tools. Together, they empower security teams to maximize clarity, responsiveness, and system performance under any conditions. And with the right stream management strategy, organizations can unlock faster decisions, leaner networks, and a higher level of operational readiness.

Because in critical infrastructure, every frame matters and every second counts.

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