



digital nirvana

WHITE PAPER



LOGGING ENTERS THE **NEXT GENERATION**

www.digital-nirvana.com

Introduction

Reliable, scalable, and effective compliance logging and monitoring is a core function for broadcasters, but many large media organizations are at a crossroads. In order to meet regulatory and compliance requirements, they need a comprehensive, efficient, and easy-to-use mechanism for collecting and using insights about aired content.

Many broadcasters and network operators are heavily invested in-and still working with -legacy monitoring equipment, like Volicon, that has reached its end of life and has very limited pass-through support. These legacy systems range from a single server and a few users to the scale of thousands of servers and hundreds of thousands of users.

As they start down the upgrade path, broadcasters and network operators need many of the same features of the “standard” compliance system, but they also want new features and capabilities that will serve them well into the future.

But what constitutes such a solution, and how does it go beyond baseline functionality to provide the advanced capabilities that can take broadcasters from status quo to the next generation? And how do you choose a vendor that will support you over the long haul? In this paper, we'll answer those questions.

Compliance Logging in Perspective

So, what exactly do we mean by compliance logging and recording? It's useful to think of it as a time machine—a system that lets you go back and look at any video content, with associated audio and metadata, that was broadcast at some point in the past. Since recorded video is the ultimate affidavit of what was actually broadcast over the air, it plays a vital role in engineering/quality assurance as well as proof of compliance with internal standards and governmental regulations (e.g. mandates for closed captioning, conformance with loudness thresholds, and rules against indecency, profanity, and obscenity).

Of course, regulatory compliance is the original driver for content logging. But over time, these systems have taken on an even broader role in broadcast operations as other stakeholders have recognized the value of a comprehensive archive of aired content. The sales department, for instance, can mine the data for proof of ad conformance with customers. The social media team can access content for repurposing on various online platforms. And CEOs and other managers can use the content to make strategic decisions about the overall broadcast product.

Baseline Functionality – the Essentials

At the very least, the compliance system must offer the basic capabilities that customers of Volicon and other legacy products have come to rely upon. The foundational components listed below should be the starting point for any broadcast organization.

Robust Tools for Capturing, Recording, Storing, and Streaming Video, Audio, and Data

The compliance system should be able to natively capture content from any video source in the broadcast delivery chain. Converting physical inputs only adds to complexity, cost, and other points of failure. Broadcasters need visibility into every link in the delivery chain and the ability to monitor every handoff for quality issues. To that end, the system should natively support all formats including SDI, IP, ASI, 8VSB, HDMI, QAM, HLS, DASH, RTMP, and DVB-T/T2/S/S2.

Easy Access to Archived Content

Once the content is physically captured, the system needs to provide a secure means of recording and storing gapless video files for the maximum period required to meet compliance as well as the company's own business needs. Users should be able to search the archive easily for the assets they need and gain immediate access to the content and its associated metadata.

Metadata

At a minimum, the system should record compliance-related metadata including subtitling (closed captions, teletext, DVB-subtitles) and calculated data based on loudness, which has now become a global compliance and governance issue. Other important metadata types include as-run log integration, ratings data, Dolby metadata, and SCTE 35/104 ad insertion data. All metadata must be accurately correlated with the video and audio content.

A User-Friendly Interface

It goes without saying that the system should be easy to use, with a simple and intuitive web-based interface. Users should be able to find their desired frame-accurate content, clip it, and then share or publish it with no more than a few mouse clicks.

Enterprise-Scale Reliability

The system should be able to support every operation from a single-channel broadcast station to the largest media enterprises and networks, with the ability to record hundreds of channels and provide hundreds and even thousands of users with reliable, 24/7 access.

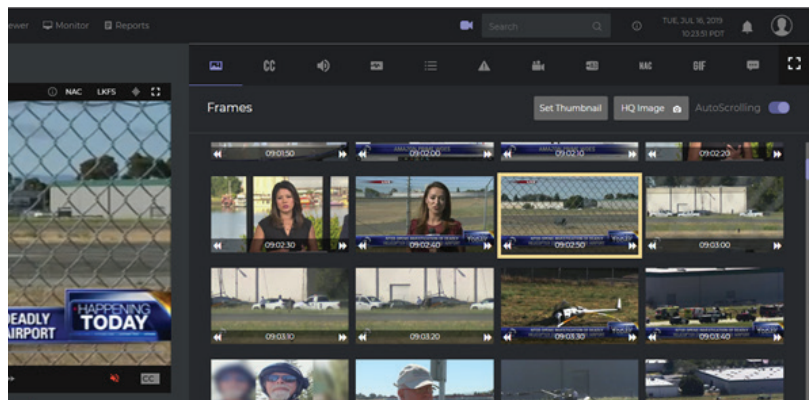
From Baseline to the Next Generation

For longtime Volicon users, the capabilities listed above are not only essential, but are the baseline moving forward for any logging and monitoring compliance solution. Now that Volicon has reached its end of life and has very limited pass-through support, these companies need a migration path that builds on those core logging capabilities-retaining all the features that were important while moving the operation to the next generation of content logging, monitoring, and compliance.

Digital Nirvana's major objective is to retain the key features that were valued and loved in legacy systems, while providing next-generation capabilities. These should include the following:

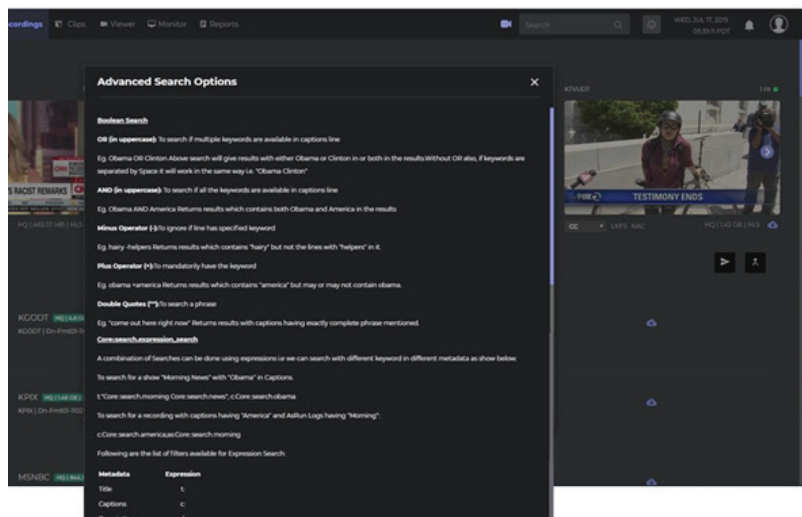
An Enhanced User Experience

From a single screen, Digital Nirvana's MonitorIQ solution provides everything a user needs to understand, find, clip, export, and analyze content with a minimum of clicks. The user interface provides one-click access to metadata, with the ability to search on all metadata and then clip and share content with frame accuracy (figure right).



Super Search Capabilities

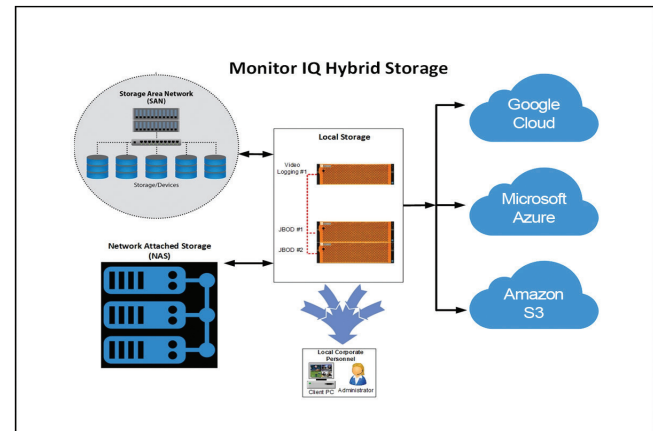
In the MonitorIQ solution, users are able to find specific content quickly by searching on closed captions, as-run log data, traffic data, and custom generated data by users. MonitorIQ provides new advanced Boolean capabilities to search and find content globally or identify very specific content.



A Cloud Infrastructure for Compliance and Archiving Workflows

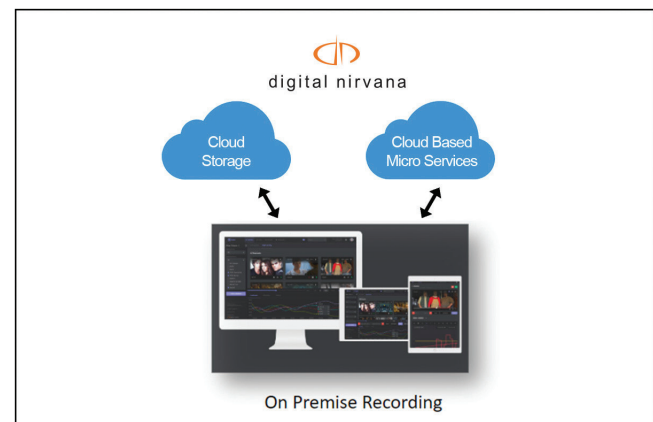
The Digital Nirvana solution is built on a reliable, flexible, and expandable architecture that enables onpremise, cloud, or hybrid implementation. This novel approach allows our customers to extend storage durations at will and provides instant archive of one or all critical assets, all of which can be viewed at any time in the MonitorIQ user interface.

For archiving, the MonitorIQ solution will provide the flexibility to support any hybrid combination of cloud/ on-premise capabilities. Customers have the ability to export content to any external data storage structure, and then bring it back easily into the MonitorIQ compliance system for advanced access and collaboration. Or, customers can implement an archiving scheme that provides limited near-term storage in the local SAN or NAS coupled with longer-term storage in the cloud, based on the company's internal policies.



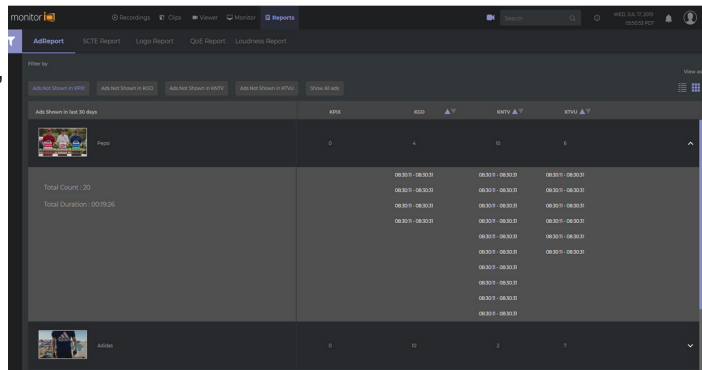
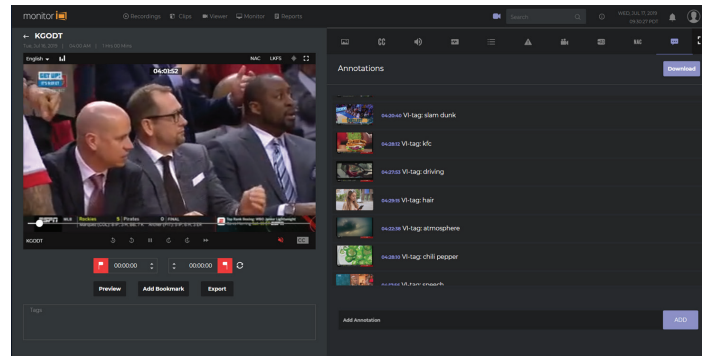
Advanced Applications

Another powerful, next-generation feature integrated with the MonitorIQ solution is a set of AI-based cloud microservices, value-added applications that can be spun up very quickly as needed and run on top of the compliance system.



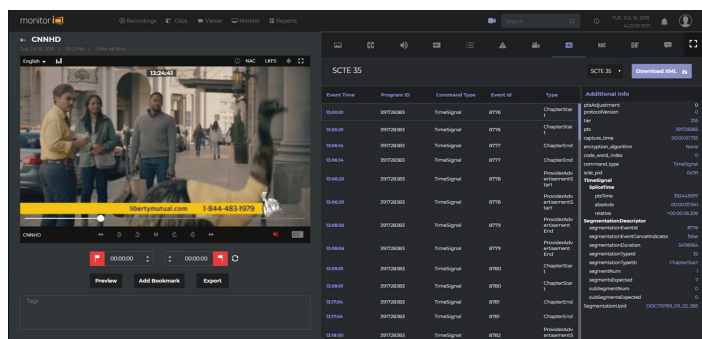
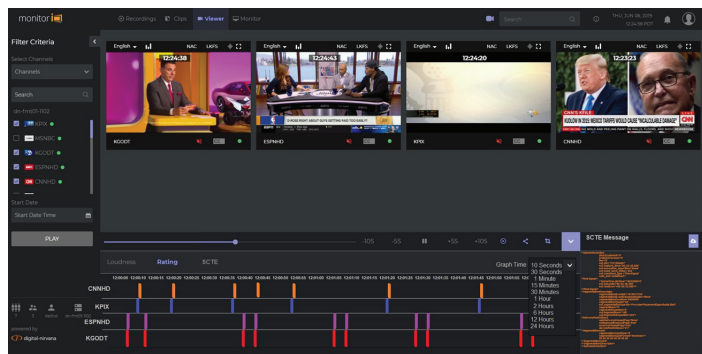
These capabilities include:

- Speech to text for closed caption generation and transcripts
- CC/Teletext conformance to streaming services' standards (Hulu, Netflix, Amazon, etc.)
- Metadata enhancement. Microservices can be used to add powerful text and video-intelligence functions for recognition of faces, logos, and images
- Ability to detect ads in competitive programming and identify the category of the ad and advertisers.

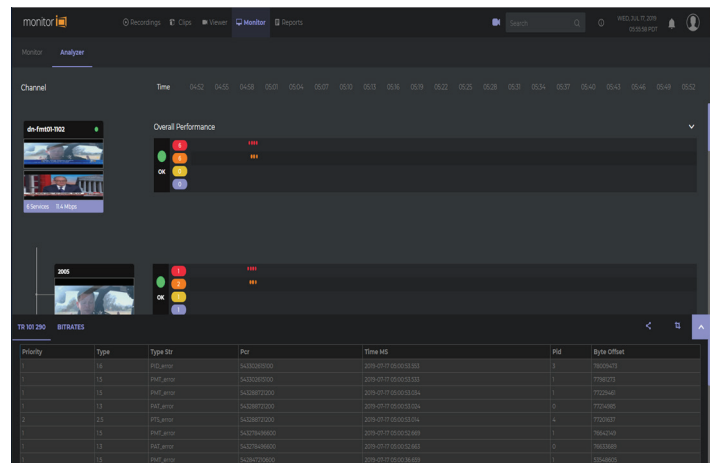


Advanced Analysis and Reporting

Any new logging system must offer enhanced insights into content for quality and problem analysis. Digital Nirvana's MonitorIQ solution will enable users to deep-dive into the full SCTE message for analysis and display SCTE messages from multiple points to allow comparison and troubleshooting at different points in the delivery chain. This provides much deeper insights into ad insertion data, as shown in the screenshots.



MonitorIQ's Transport Stream Analysis feature will correlate P1, P2, and P3 transport stream errors with quality of experience errors such as no video, static video, and loss of audio or metadata. This will provide engineers with a real-time understanding of the impact transport stream errors have on the underlying video, audio, and metadata. This highly desired functionality will reduce the time to troubleshoot issues and assure the delivery of a quality experience to customers.



Ability to Add New Features

As broadcasters need to grow and change, so does their logging system. The Digital Nirvana architecture was designed with this goal in mind. Because the system uses a “plug in” approach, new features can be added faster than with conventional systems. Also, the microservices capability built into Media Services offers a cloud-based path to new features and capabilities.

A Scalable, Extensible, Reliable, and Secure Architecture

The Digital Nirvana solution was designed to run locally as a full turnkey solution or in a virtual environment, using local customer hardware or residing in the cloud or in a hybrid configuration. This flexibility allows Digital Nirvana to meet the needs of all customers-from single-channel broadcasters to multichannel, multigeography network operators and station groups.

The solution also provides an extensible list of open APIs for easy integration into broadcast workflows or third-party systems.

For maximum security and uptime, MonitorIQ is built on Linux. Not only does Linux drastically reduce viruses and malware threats, but it removes the emergency security updates-as well as the forced hardware obsolescence-of Windows.

Digital Nirvana - the Safe Choice for the Future

In its day, Volicon was the gold standard of content recording, logging, and monitoring; in fact, “Just Volicon it” had become a common expression among its dedicated customer base. At Digital Nirvana, we’re uniquely positioned to understand the pain points of customers who are still relying on Volicon installations - and we know how critical it is to sign on with technology partners that will be there for the long haul.

Not only is a large percentage of the Digital Nirvana executive team comprised of former Volicon managers, but we have the staying power of a company that has been on the leading edge of knowledge management technologies since 1996. With 750 employees worldwide, Digital Nirvana is focused on the core competencies of video, speech to text, metadata generation, and compliance. And with our dedicated, worldwide 24/7 support team, we’re poised to help Volicon customers make a successful transition to next-generation compliance monitoring.

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Digital Nirvana delivers knowledge management technologies that empower organizations worldwide to create content, automate the generation of captions, subtitles, and metadata, as well as monitor the delivery of broadcast media. Built on two decades of industry experience and equipped with next-generation capabilities, the company's Trance and MonitorIQ, products harness best-of-breed video, audio, and AI technologies to drive new levels of speed, creativity, quality, and insight. Addressing the needs of modern broadcast media companies, these agile products scale to deliver high-impact services for organizations of all sizes, across all regions.