

Safeguard video network performance

Reduce incident response times and boost Quality of Service

High-quality streaming services require video networks that are always ready to deliver peak performance. With today's complex, geographically distributed video architectures, it can be incredibly challenging to keep networks healthy and operating flawlessly. When issues do occur, even brief service incidents can impact customer satisfaction, which can cause revenue losses and inflict damage to your brand. To safeguard the performance of your video services, Velocix offers **Network Operations Centre (NOC) Shadowing**.

What is NOC Shadowing?

NOC Shadowing is an automated monitoring and proactive maintenance service that can be used in concert with Velocix's video solutions, including our CDN, Origin, Personalisation Platform, and Recording Management software. It is designed for video service providers that are interested in delivering the highest Quality of Service possible to their customers, in the most cost effective manner.

NOC Shadowing augments service providers' own operations and product support staff with Velocix's dedicated team of video experts. Velocix works with your team to boost the performance of the end-to-end video network, providing infrastructure management, expansive Level 1 product support, software patch updates, and assistance with key tasks like channel creation.



Faster incident recovery

Respond faster to incidents with in-depth performance insights, and recover at an accelerated pace.



Manage network constraints

Proactively detect traffic bottlenecks and perform capacity planning driven by key data.



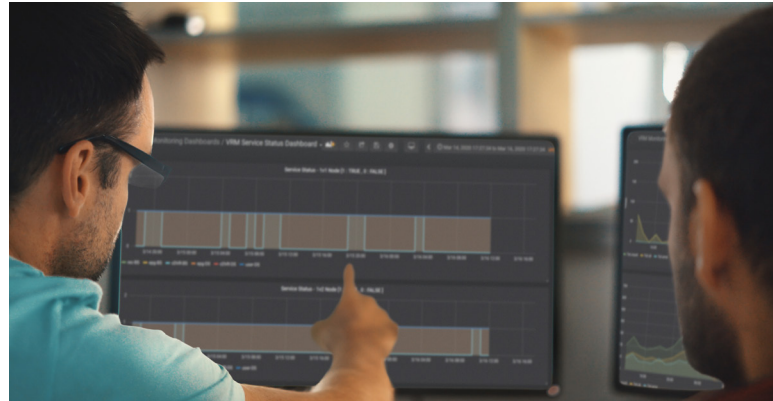
Proven, expert assistance

Rely on a team of video experts skilled in rapidly triaging and fixing problems.



Faster incident recovery

The NOC Shadowing service maintains a watchful eye on the performance of your content delivery system using a sophisticated suite of remote diagnostics and customisable reports. With a deeper scan of key performance metrics, Velocix can help identify performance issues earlier, which can substantially shorten incident response and restore times.



Prevent traffic bottlenecks

Beyond monitoring streaming performance, NOC Shadowing can proactively detect performance bottlenecks and assist with capacity planning. Velocix taps into the video network to analyse traffic demands and assess resource utilisation. The result is a set of key performance indicators that guide operators on how to scale-out the video network in the most efficient manner.



Proven, expert assistance

Velocix manages streaming services for many of the world's leading network operators. We look after thousands of servers, which are used to deliver millions of simultaneous video streams to consumers, every single day. Equipped with advanced training, real-world experience and critical video domain expertise, Velocix technicians have the necessary skills to spot and resolve issues quickly, so your network is ready to perform at all times.



How does it work?

Velocix's 24 x 7 x 365 NOC Shadowing service is managed remotely using our cloud-based Advanced Monitoring Platform. We can monitor and manage any solution in the Velocix suite, including CDNs, origins, stream personalisation software, and recording systems.

Alerts and reports are made available to the client to optimise incident response times and safeguard the performance of the streaming infrastructure. It is a proven approach that delivers results, ensuring the network is healthy and ready to support the needs of your business.

Interested in learning more? Contact us for a demonstration.

CDN Monitoring

Ensure your subscribers receive the highest quality viewing experience

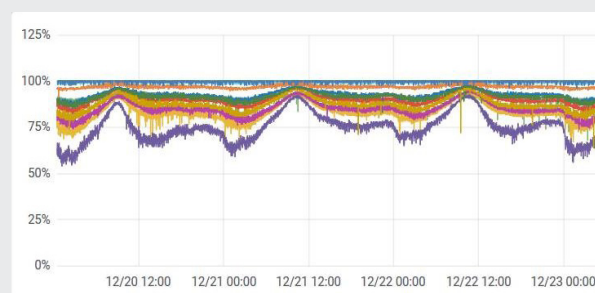
CDN Monitoring provides a 360 degree view of the performance of the Velocix CDN solution. Using multiple dashboards and an array of KPIs, the monitoring spans all critical video network functions. Velocix's NOC Shadowing team uses this information to proactively detect potential issues and ensure the highest quality of experience is delivered to every subscriber.

Key metrics include:

- Hosting and infrastructure
- Service monitoring
- Network traffic and cache efficiency
- HTTP errors and CDN response times
- Management System (UMS) loading and request routing
- Delivery and headroom capacity

Capacity / performance dashboard

Using our Delivery Capacity API, Velocix's Advanced Monitoring Platform retrieves information from the CDN, which allows our team to proactively detect capacity and potential performance issues.



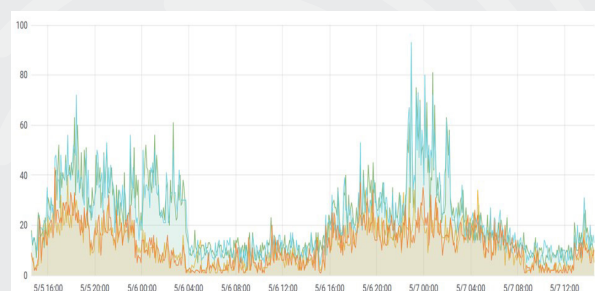
Traffic analysis

Traffic statistics are collected frequently to determine the trends and any abnormal traffic patterns. This also allows cache efficiency and distribution metrics to be analysed. Velocix's NOC Shadowing team uses several dashboards for traffic analysis to assess the data per region, per point of presence (PoP), and per CDN delivery appliance (DA), alongside the associated cache efficiency.



UMS request routing load analysis

The Unified Management System (UMS) dashboards and key performance indicators provide additional data about the utility services load and the distribution of website objects.



Origin Monitoring

Analyse performance and uncover issues before they impact services

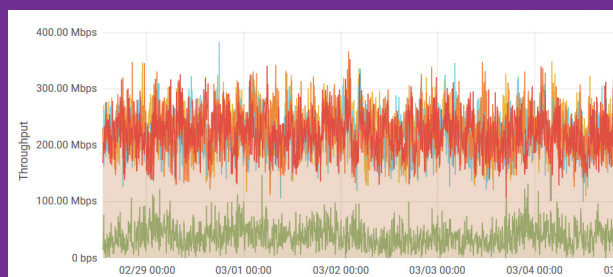
Origin Monitoring provides a comprehensive view into the performance of the Velocix Origin Application (VxOA). This delivers valuable performance insights, as well as detection of potential problems in advance. Analytics are designed to uncover issues before they affect services to ensure subscribers receive the best Quality of Service possible.

Key performance metrics include:

- HTTP requests and traffic information per cluster, origin server, and service type
- HTTP return codes
- Service status and continuity check errors
- Digital rights management (DRM) and Ceph storage status, including latency and usage
- Database status, including storage and capacity

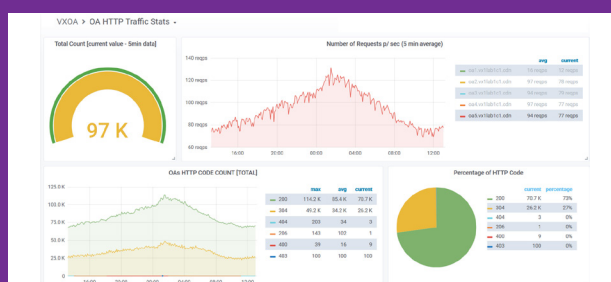
HTTP statistics and traffic dashboards

Insightful monitoring dashboards provide multiple views of the origin traffic and critical HTTP statistics.



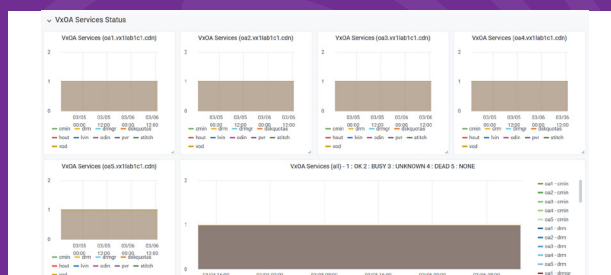
HTTP return codes analysis

The HTTP status codes of origin responses unveil traffic status, and this helps to catch many errors that may occur in the origin, as well as in other intermediary applications.



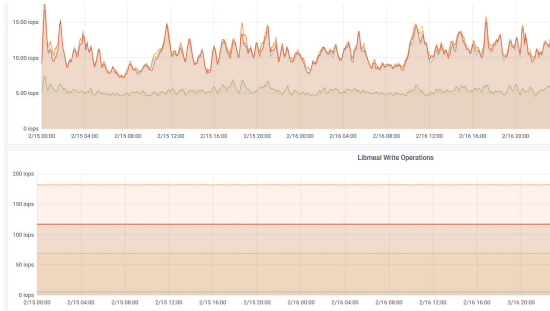
Origin Application status dashboard

On a dedicated dashboard, the NOC Shadowing team can also monitor the status of Origin Application services and the resources consumed, including the DRM service status.



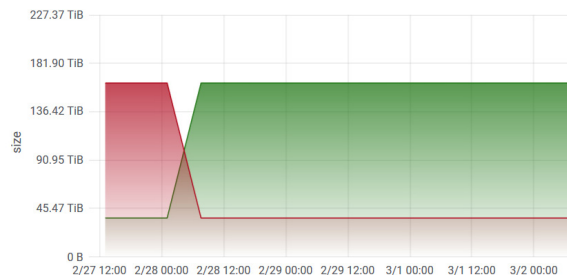
Origin Monitoring (continued)

Analyse performance and uncover issues before they impact services



Ceph storage statistics dashboard

Velocix's Advanced Monitoring Platform can perform trend analysis on disk read and write performance to gain a better understanding of disk utilisation and storage system health.



Storage and capacity monitoring

When it comes to capacity planning and monitoring, storage is a critical component of the Origin. All video object storage is performed by Velocix's Ceph-based distributed storage system, and the service configuration information and metadata is stored in the Cassandra database platform. Velocix's NOC Shadowing service provides daily automatic checks on critical Ceph and Cassandra resources.



Personalisation Platform Monitoring

In-depth service health monitoring

The NOC Shadowing service provides detailed insight into the performance of Velocix's Personalisation Platform (VPP), enabling system optimisation and early detection of potential issues across ad insertion, alternate content and blackout content management.

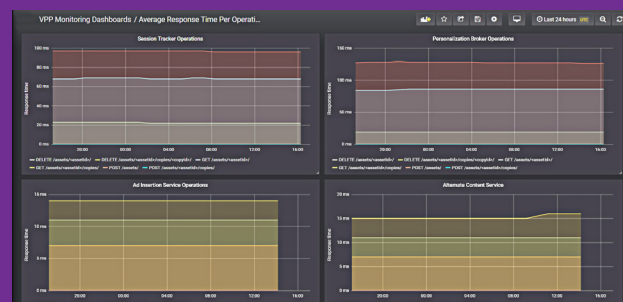
The advanced diagnostics are designed for monitoring VPP's micro-service based applications with Business and Data Services running in separate VMs.

Key VPP elements monitored include:

- Broker business service and data service
- Tracker business service
- Console business service and data service
- Ad insertion service
- Alternate content service
- Blackout service
- Gateway and load balancer services
- Decision Engine service
- Database node (MySQL / Cloud native DBMS)

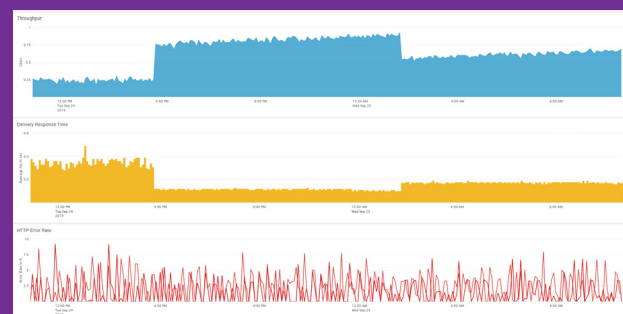
QoS monitoring

The QoS monitoring for VPP helps to identify any gradual degradation of service, and thereby prevents potential failures by enabling operators to take action pro-actively. The QoS is monitored by determining how quickly the Personalisation Engine responds to HTTP responses, using log files to assess the duration of responses.



Application traffic and error rates

The traffic rates and the delivery bandwidth for the edge components are monitored by processing the Internet Content Adaption Protocol (ICAP) and HTTP rate counters, which are available as SNMP objects in the Personalisation Engine.



Ad integration monitoring

VPP integrates and interoperates with multiple third party systems, including Ad Decision servers, Ad Storage servers, and ESNI interfaces. The Advanced Monitoring Platform continually scans the integration logs of VPP to ensure there are no interoperability issues with these third party systems.

Recording Manager Monitoring

Analyse recording 24 x 7 x 365 for uninterrupted workflows

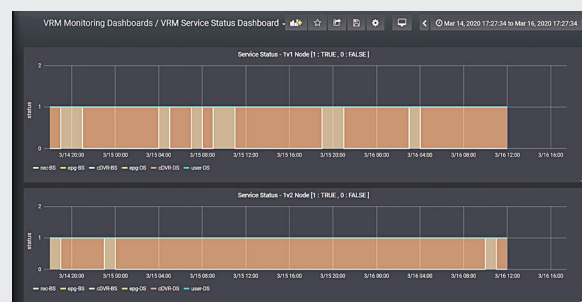
Recording Manager Monitoring enables operators to optimise the delivery of time-shifted video and Cloud DVR services by analysing the Velocix Recording Manager (VRM) software. The advanced diagnostics are designed for VRM's service-oriented architecture, where multiple services run as independent and self-contained microservices, which are responsible for various business and data functions.

Key services monitored by the NOC Shadowing team include:

- Scheduler business service
- EPG business and data service
- Recorder business and data service
- User business and data service
- Authentication business service
- Console business service

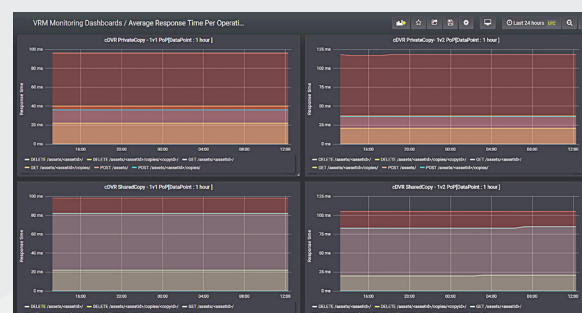
VRM service monitoring

All VRM services are continually monitored and analysed for service continuity by Velocix's NOC Shadowing team.



Quality of Service monitoring

VRM business services are exposed as HTTP endpoints, and these act as the primary interfaces for end subscribers and operators. The key Quality of Service parameter for each of the business services is the API response time. The NOC Shadowing service continually collects and plots the average response time taken to serve user requests, as well as internal application requests for each individual service.



Application request and error rates

Monitoring the application request and error rate data is a fundamental element of understanding the transaction load on VRM and ensuring effective service continuity.



Recording Manager Monitoring (continued)

Analyse recording 24 x 7 x 365 for uninterrupted workflows

Origin and recording engine integration

The NOC Shadowing service closely monitors the integration between VRM and the origin clusters used to record live programming. Data is gathered to track how origin clusters are utilised across different asset and service types. Using these insights, service providers are able to understand the recording and viewing patterns for specific content and tune their platform to optimise efficiency.

CDVR storage and capacity planning

VRM recording requests are stored on a MySQL cluster database. Due to the heavy volume of recording usage associated with Cloud DVR (CDVR) services, the storage can quickly build up on the database. Velocix carries out frequent audits to check database integrity and ensure VRM is operating at peak performance levels.

