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Stream Monitor Service

+ May 2018

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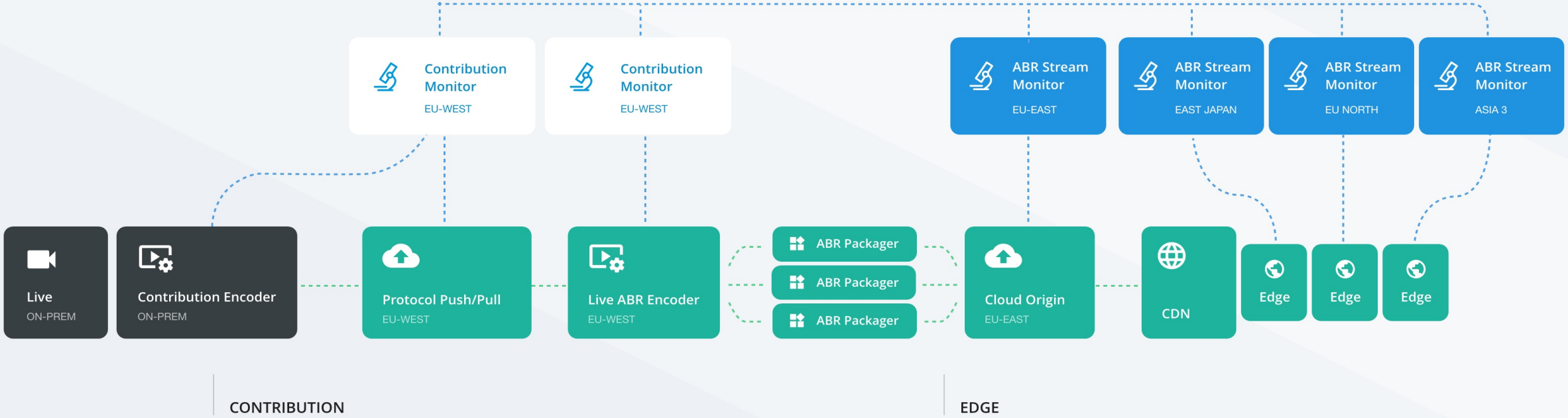
Stream Monitor

For programmers and event producers delivering live content, who need to make sure their streams are reaching their viewers at the highest quality possible.

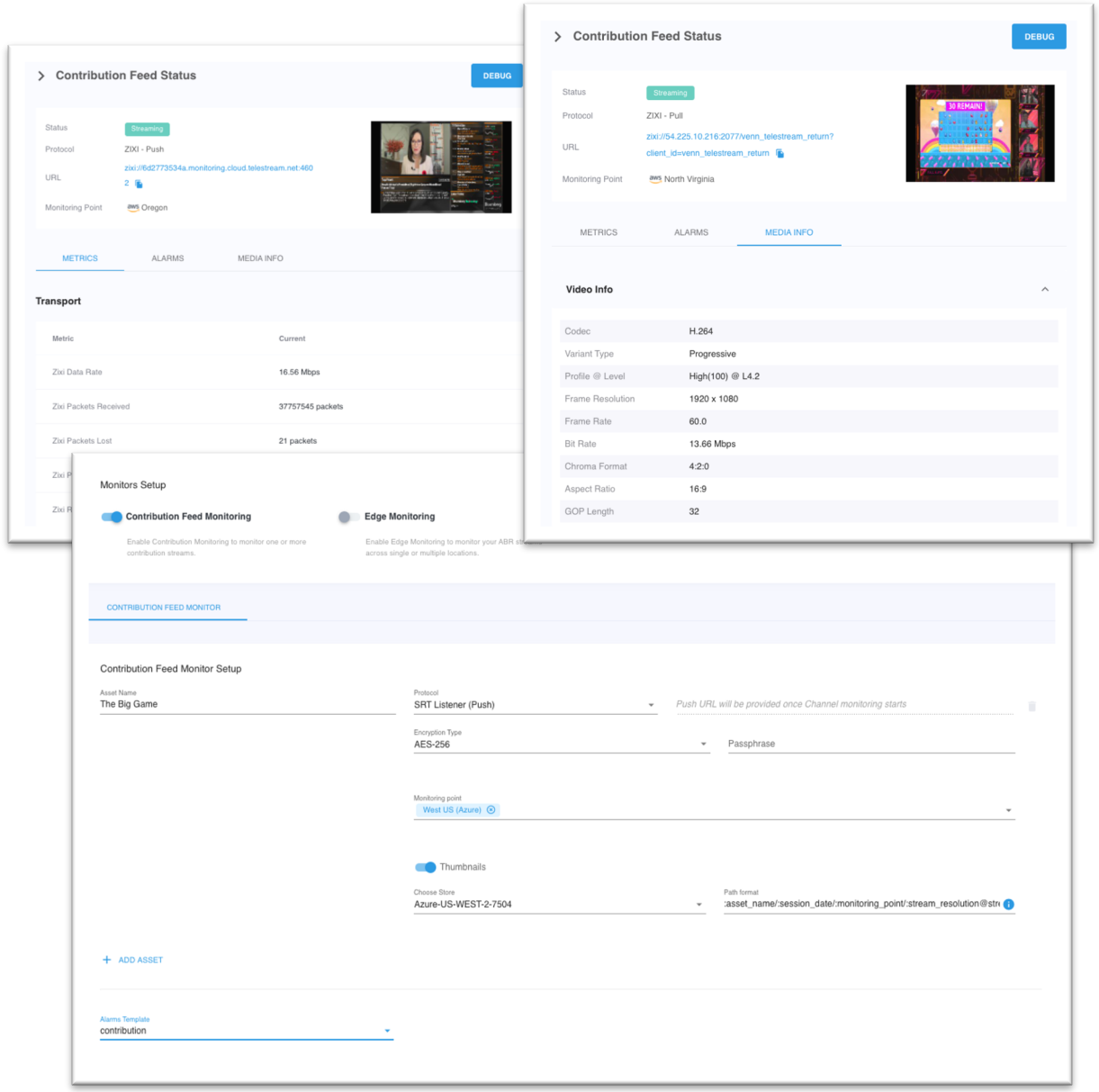
- Live Monitoring Dashboards
- Reports
- SCTE-35
- Alarms & Notifications
- Analytics
- API



Contribution Feed Monitoring

Analyze live transport streams being delivered to cloud encoding, packaging, ad insertion and delivery services

- Analyze network conditions at the point of cloud ingress
- Full support for secure, reliable cloud contribution protocols with Zixi (Push/Pull) and SRT (Caller/Listener) support
- Validate encoding settings with realtime measurement and deep audio/video quality analysis
- Ensure monetization policies are being realized with live SCTE-35 signal detection, analysis and frequency alerts
- Identify impaired feeds being delivered in to 3rd party live encoding services



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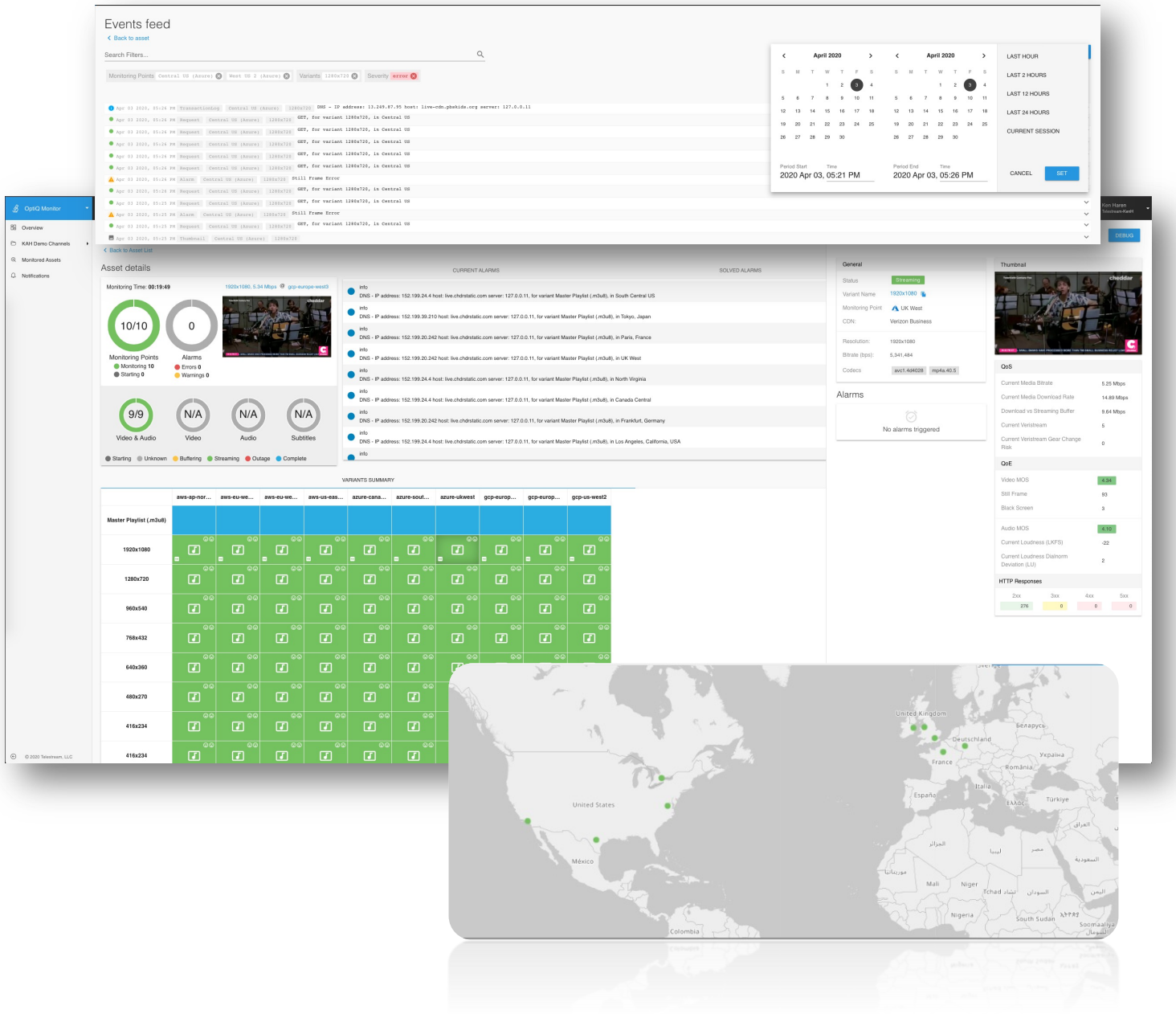

Live ABR Stream Monitoring

Measure asset availability and CDN delivery performance across the globe

- Multi-cloud deployment of monitoring services in 70+ global regions
- Detect presence (or absence) of vital ad signaling
- Best in class streaming analysis with live audio/video quality reporting
- Realtime concurrent comparison of stream health & CDN delivery performance in all regions
- Monitoring dashboards present actionable insights in an easy to understand, intuitive interface
- Open API centralizes programmatic monitoring & provides access to all collected data

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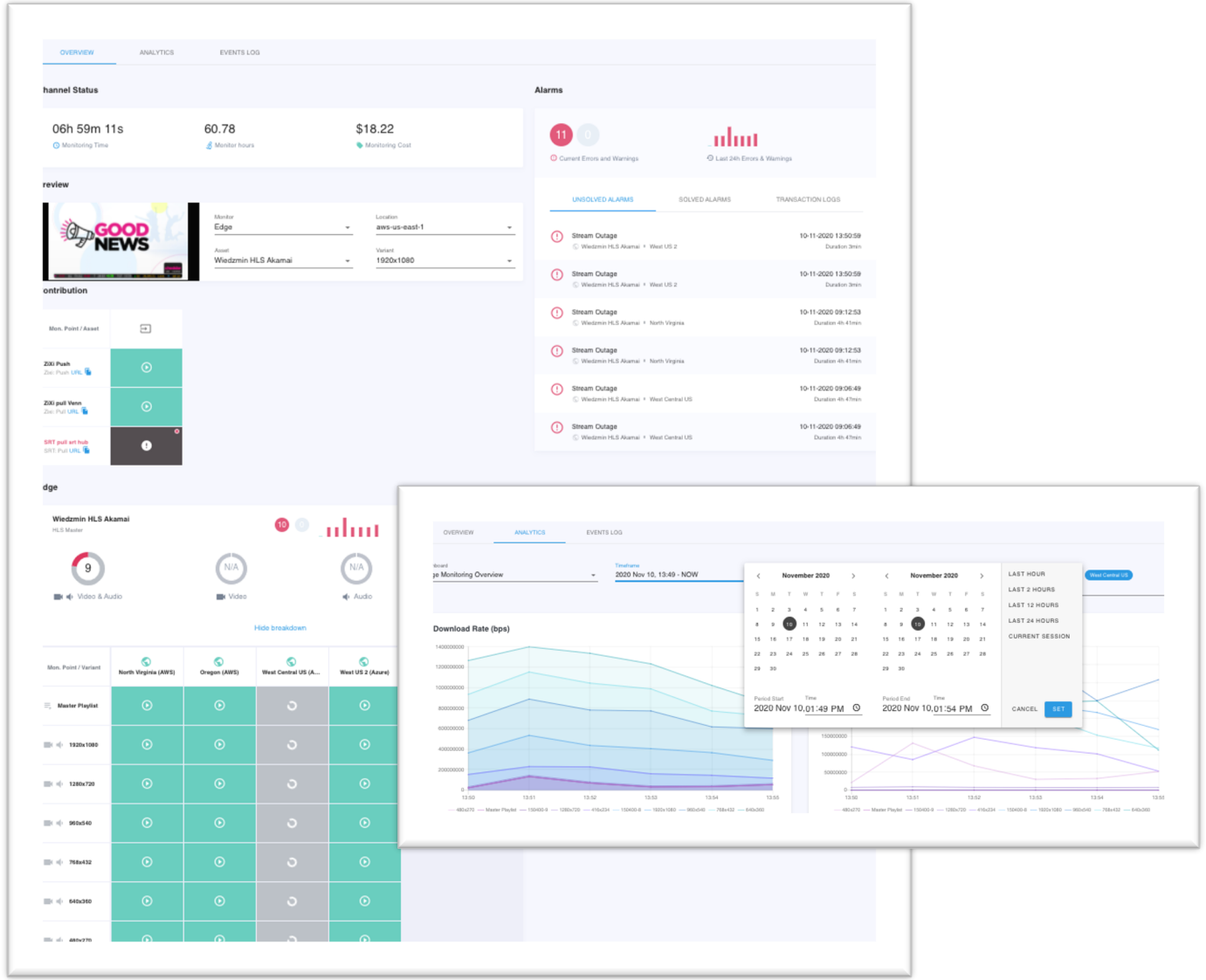
End-to-end Correlated Channel Performance Analysis

Channels define related contribution and edge assets

- Rapid identification of faults in the delivery pipeline
- Analyze how impaired signals are impacting downstream playback
- Validate ad signal propagation from contribution feed to CDN edge
- Verify audio/video quality each time the stream is modified
- Root cause analysis that can be traced through 3rd party processing centers



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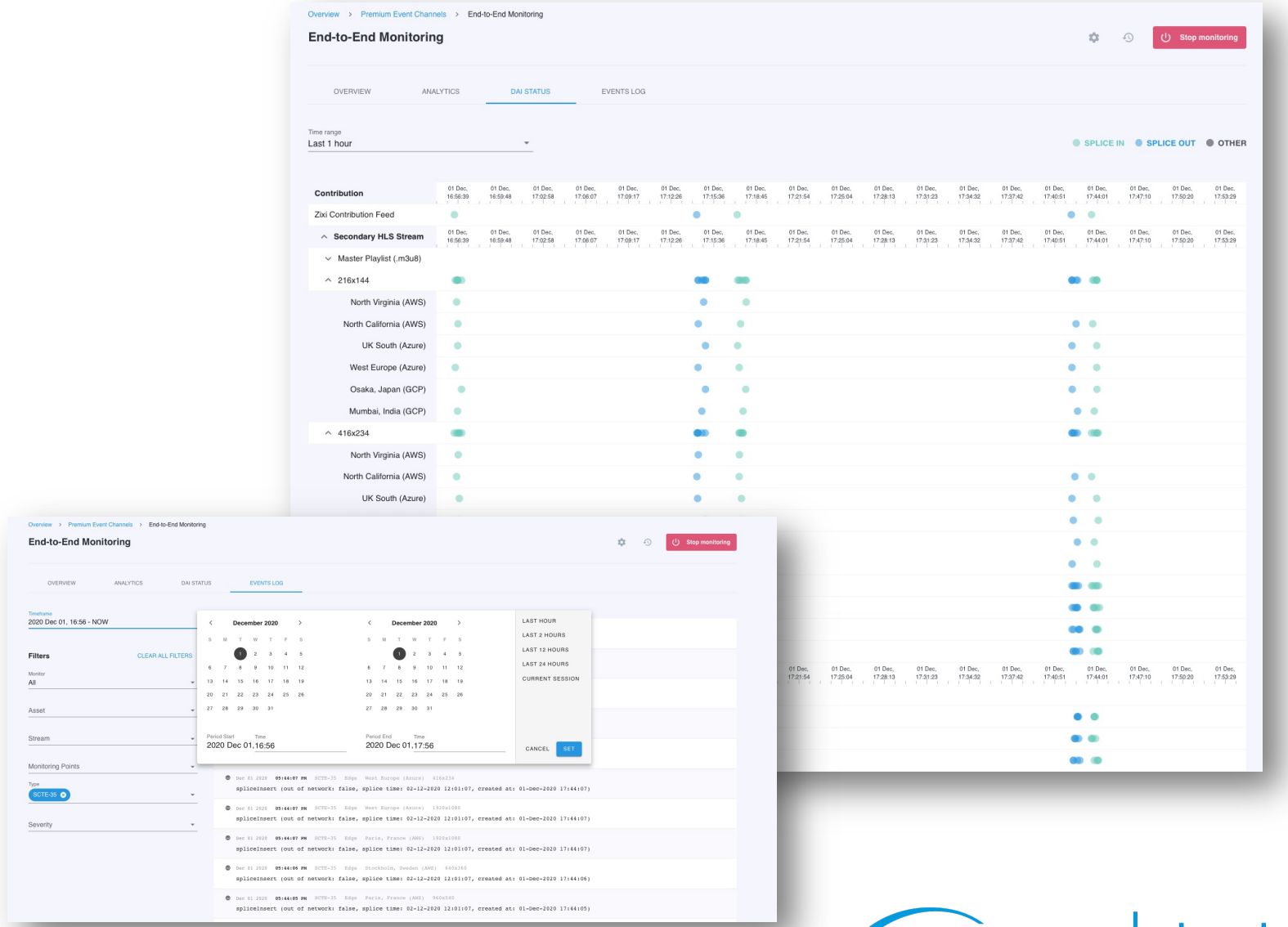
Advanced Advertising Assurance DAI Monitoring

Validate ad insertion workflow with realtime SCTE monitoring

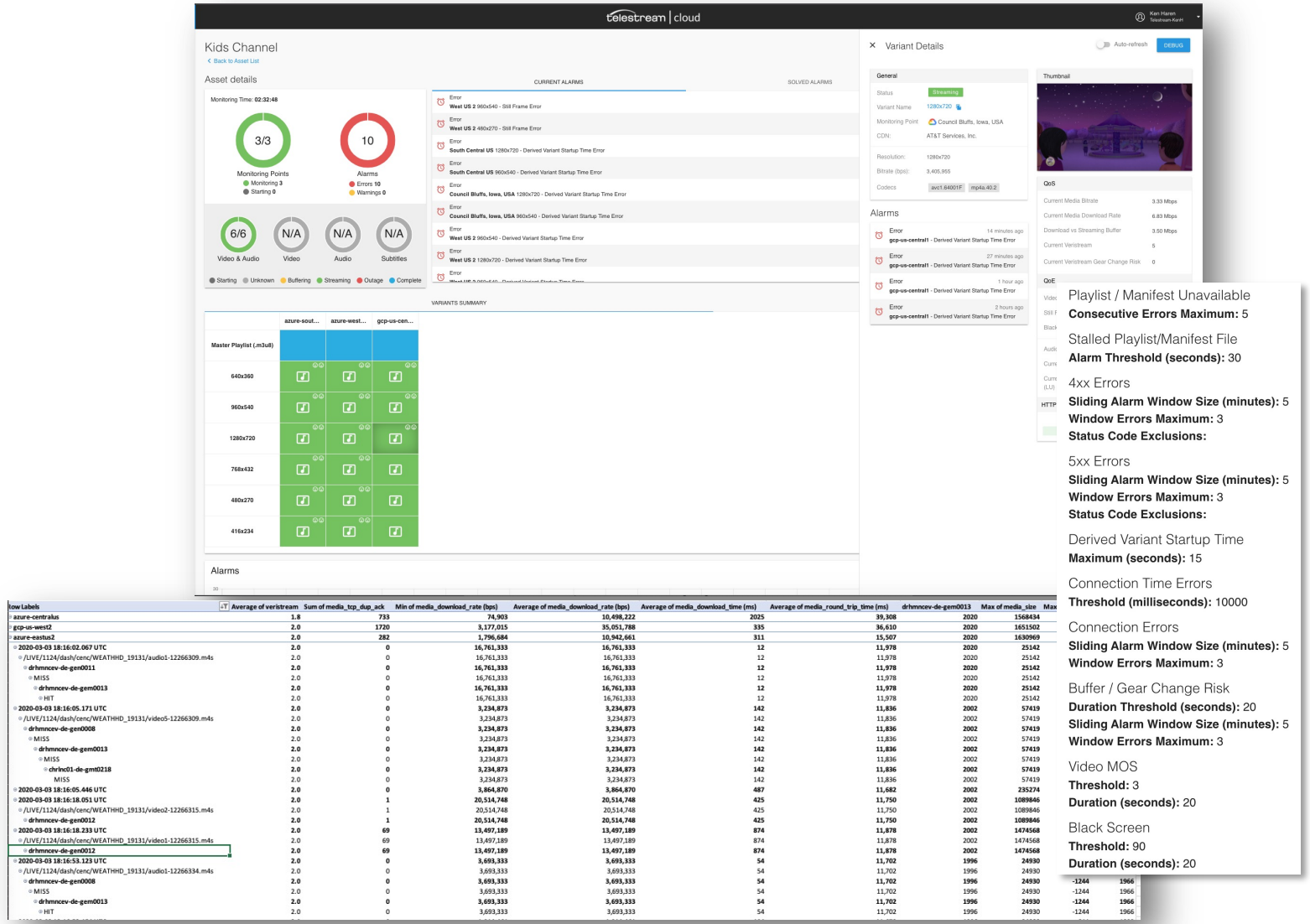
- Validate that contribution input includes properly formatted SCTE-35 signal
- Measure ad break messaging through to ABR output
- Analyze frequency and alarm on out of threshold activity
- Measure ad insert quality and compliance



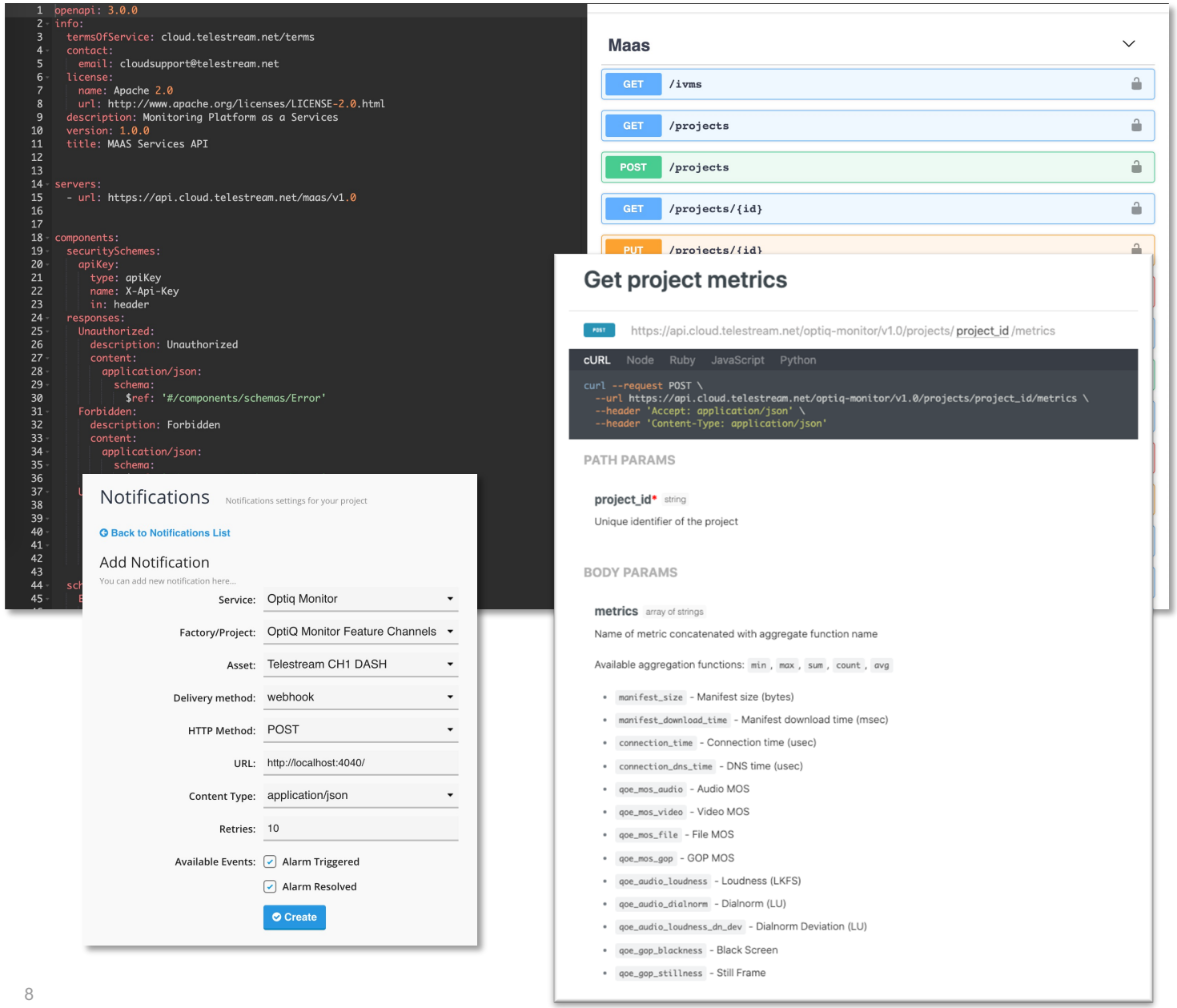
Realtime Access to Performance Details & Operational Dashboard

Simple, effective & insightful dashboards and reports

- Simplified “red light/green light” dashboards draw attention where its needed
- Detailed access to live performance metrics, transaction logs and event messages
- Customizable alarm templates tailored to your content and streaming needs
- Export comprehensive metric and event reports with trendline analysis and aggregated data functions



Automated Notifications & Enhanced OpenAPI Access



- Define email notification profiles to ensure alerts are reaching those that need them
- Enable automated responses to alarm activation
  - AWS SNS
  - Azure Event Grid
  - GCP Pub/Sub
  - Oracle Cloud Notifications Service
  - Webhooks notifications
- Dynamically deploy cloud monitoring infrastructure programmatically via the RESTful OpenAPI
- Full programmatic access to all metric, alert, event and report data via REST API

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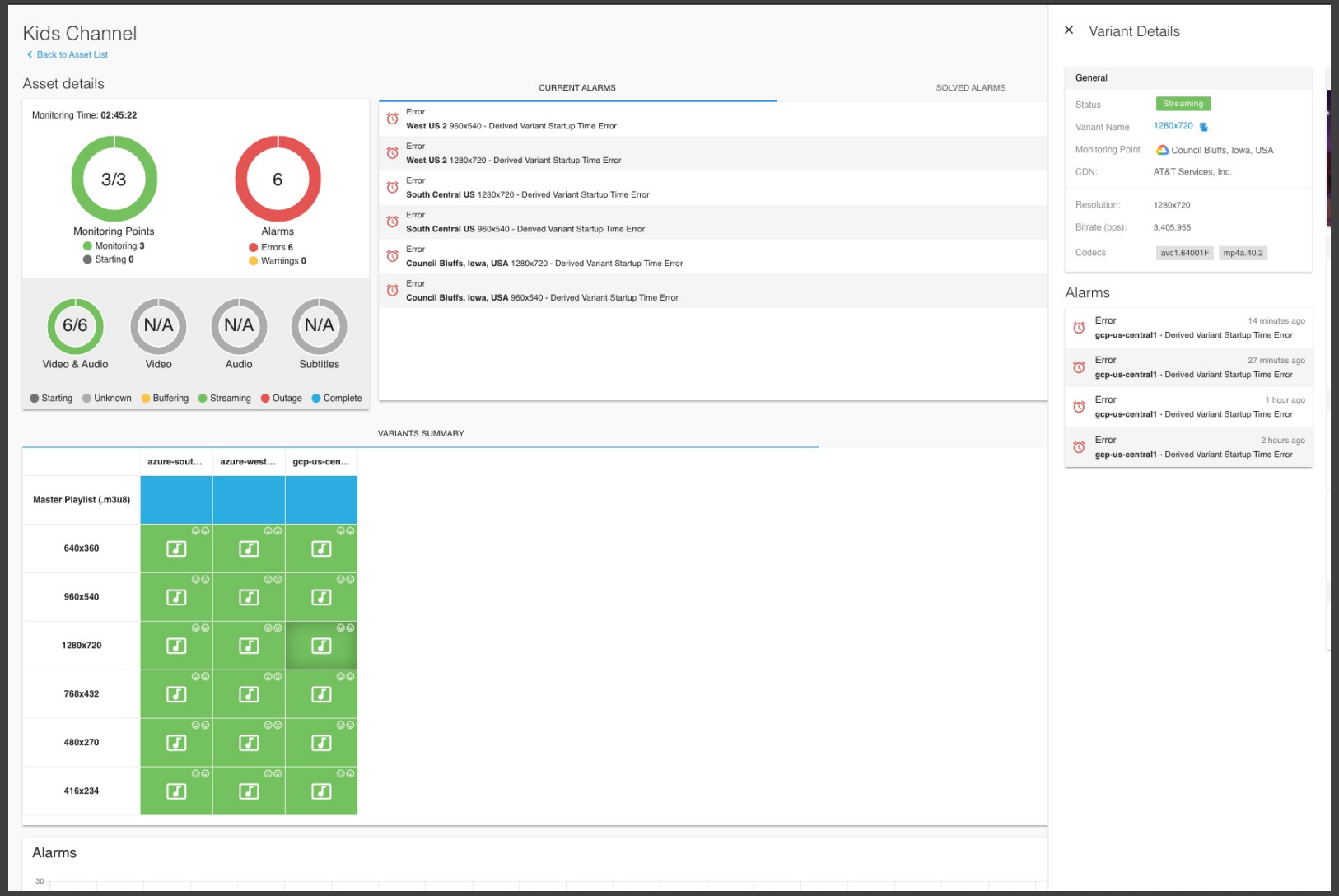
Use Cases

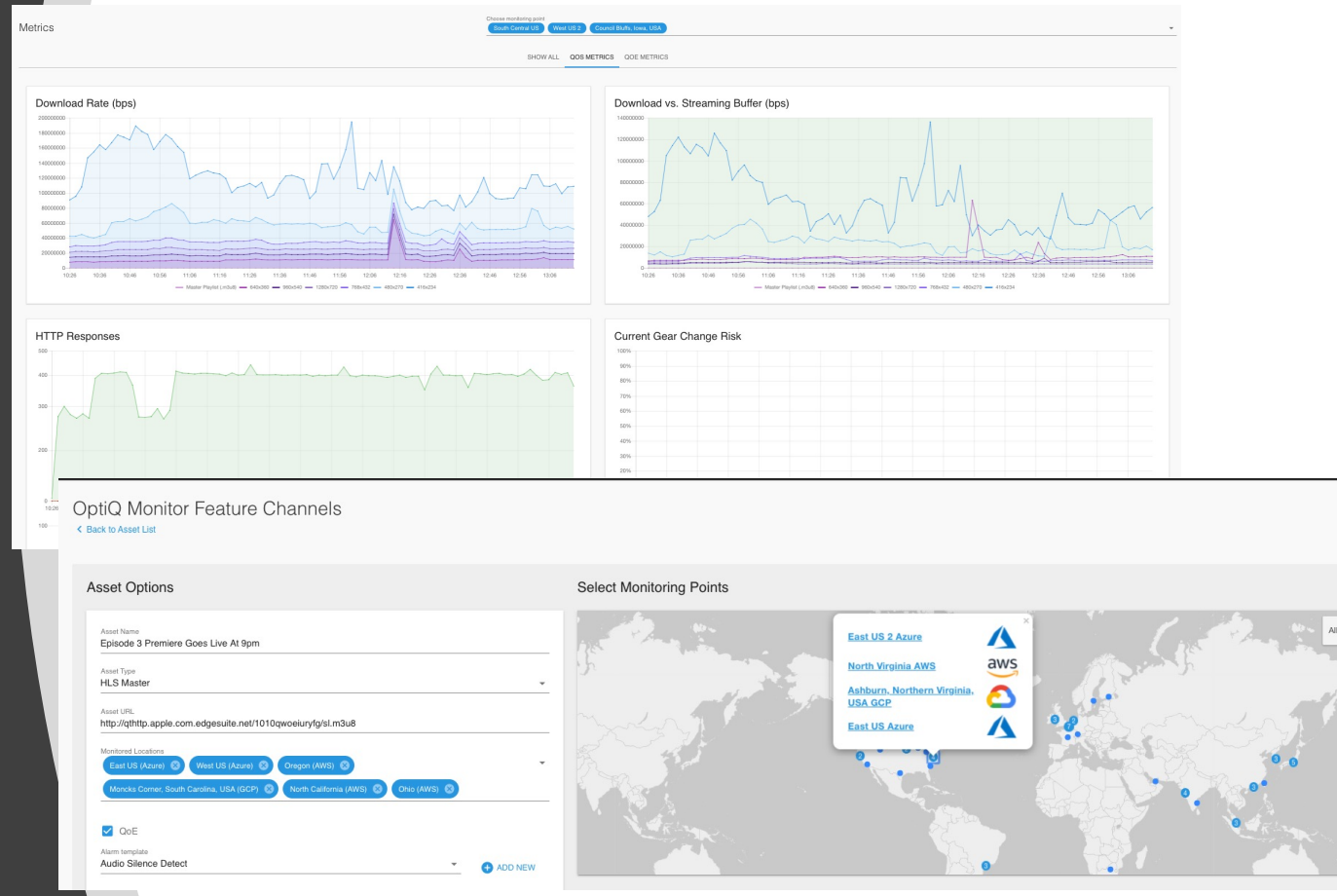
Live Monitoring of Global / Regional Event



- Measure live performance in every location at all times
  - Define the assets to be monitored
  - Specify the ideal monitoring points to measure stream health from
  - Set performance thresholds to trigger alerts and notifications
  - Start monitoring
  - Realtime analysis of stream delivery performance by region
  - Realtime analysis of encoder performance

”Warm the Cache” Workflow

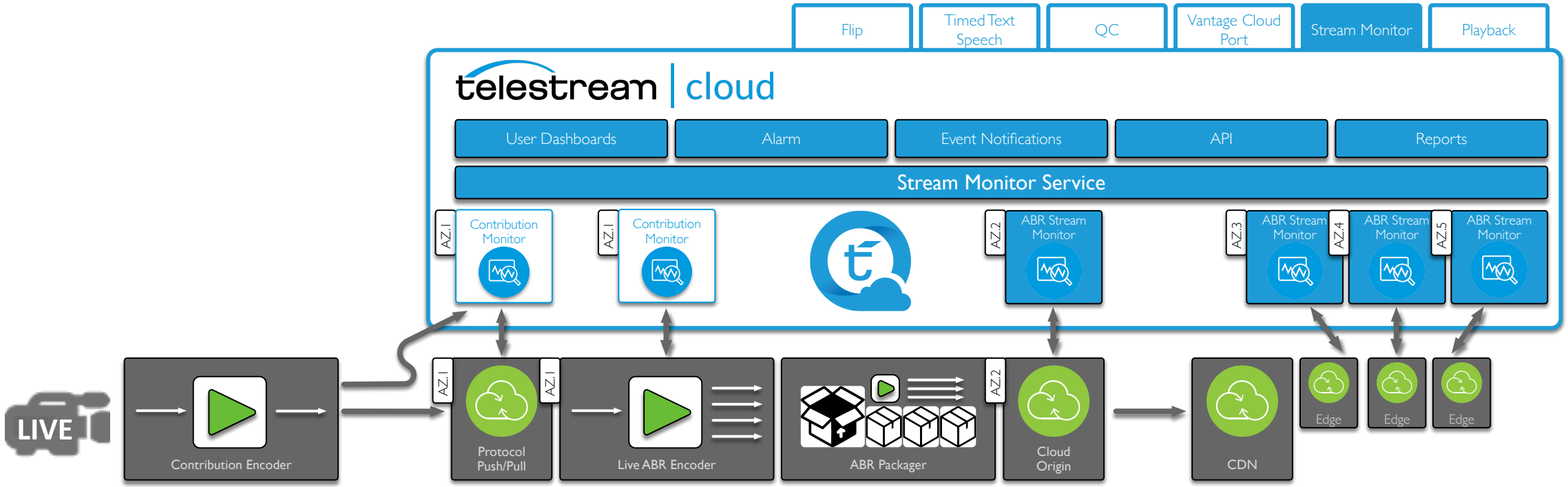
- Avoid the crush of users on the content origin
  - Define episodic VOD asset URL or live publishing point
  - Identify strategic cache locations to prepopulate
  - Begin requesting streaming variants by region
  - Identify availability and performance issues in region by CDN partner BEFORE the audience starts connecting



Historic ‘Per Request QOS’ Analysis

- Measure changes over time to CDN delivery performance & identify poorly performing cache nodes
  - Enable ‘Per Request QOS’
  - Define custom headers to associate with request QOS metrics
  - Query Live ABR Monitor Reports endpoint with target date range
  - Plug reporting data in to large data analysis tools

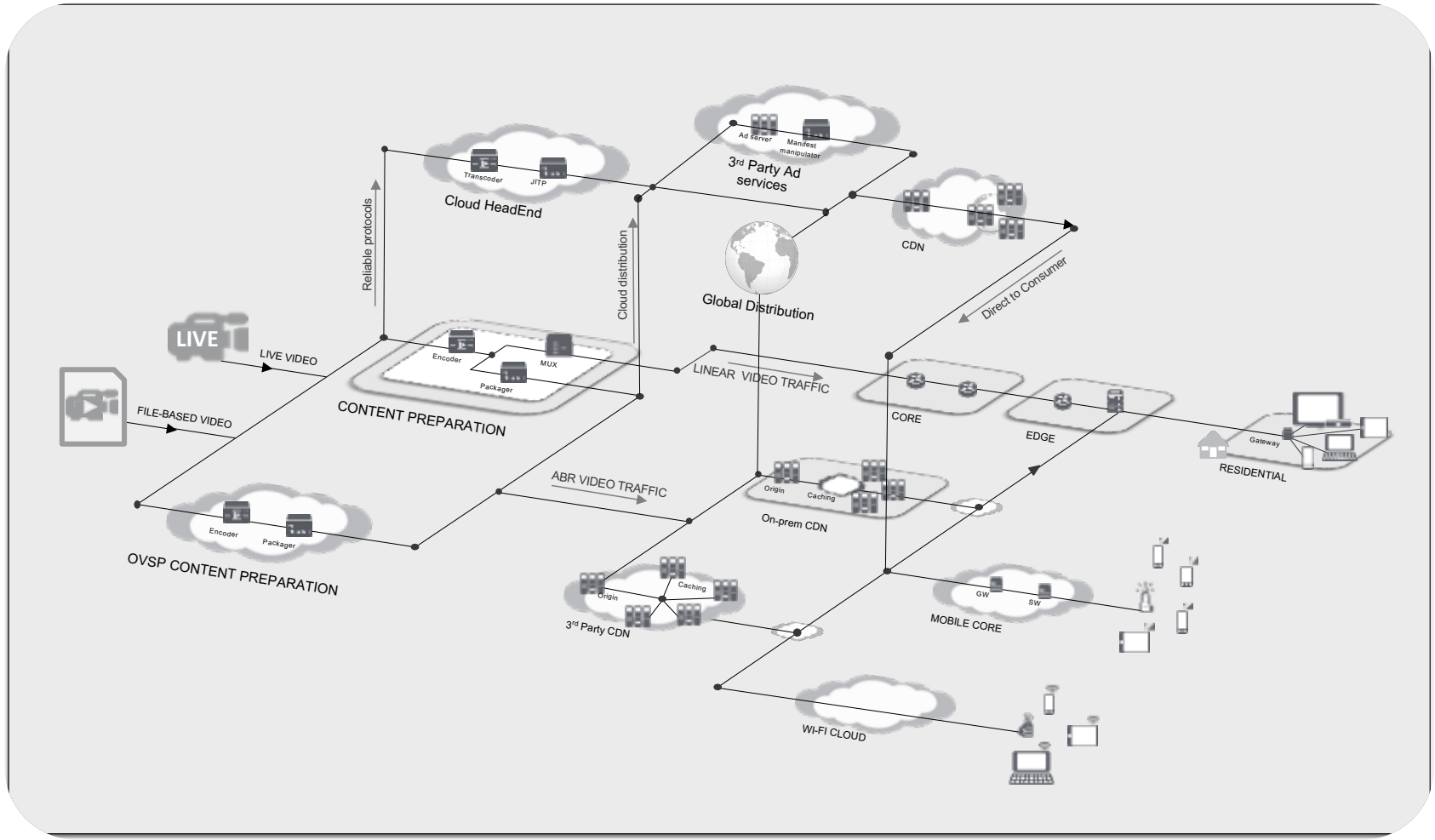
Row Labels	Average of veristream	Sum of media_tcp_dup_ack	Min of media_download_rate (bps)	Average of media_download_rate (bps)	Average of media_download_time (ms)
azure-centralus	1.8	733	74,903	10,498,222	2025
gcp-us-west2	2.0	1720	3,177,015	35,051,788	335
azure-eastus2	2.0	282	1,796,684	10,942,661	311
2020-03-03 18:16:02.067 UTC	2.0	0	16,761,333	16,761,333	12
/LIVE/1124/dash/cenc/WEATHHD_19131/audio1-12266309.m4s	2.0	0	16,761,333	16,761,333	12
drhmncev-de-gen0011	2.0	0	16,761,333	16,761,333	12
MISS	2.0	0	16,761,333	16,761,333	12
drhmncev-de-gem0013	2.0	0	16,761,333	16,761,333	12
HIT	2.0	0	16,761,333	16,761,333	12
2020-03-03 18:16:05.171 UTC	2.0	0	3,234,873	3,234,873	142
/LIVE/1124/dash/cenc/WEATHHD_19131/video5-12266309.m4s	2.0	0	3,234,873	3,234,873	142
drhmncev-de-gen0008	2.0	0	3,234,873	3,234,873	142
MISS	2.0	0	3,234,873	3,234,873	142
drhmncev-de-gem0013	2.0	0	3,234,873	3,234,873	142
MISS	2.0	0	3,234,873	3,234,873	142
chrlnc01-de-gmt0218	2.0	0	3,234,873	3,234,873	142
MISS	2.0	0	3,234,873	3,234,873	142
2020-03-03 18:16:05.446 UTC	2.0	0	3,864,870	3,864,870	487
2020-03-03 18:16:18.051 UTC	2.0	1	20,514,748	20,514,748	425
/LIVE/1124/dash/cenc/WEATHHD_19131/video2-12266315.m4s	2.0	1	20,514,748	20,514,748	425
drhmncev-de-gen0012	2.0	1	20,514,748	20,514,748	425
2020-03-03 18:16:18.233 UTC	2.0	69	13,497,189	13,497,189	874
/LIVE/1124/dash/cenc/WEATHHD_19131/video1-12266315.m4s	2.0	69	13,497,189	13,497,189	874
drhmncev-de-gen0012	2.0	69	13,497,189	13,497,189	874
2020-03-03 18:16:53.123 UTC	2.0	0	3,693,333	3,693,333	54
/LIVE/1124/dash/cenc/WEATHHD_19131/audio1-12266334.m4s	2.0	0	3,693,333	3,693,333	54
drhmncev-de-gen0008	2.0	0	3,693,333	3,693,333	54
MISS	2.0	0	3,693,333	3,693,333	54
drhmncev-de-gem0013	2.0	0	3,693,333	3,693,333	54
HIT	2.0	0	3,693,333	3,693,333	54



Live Contribution Feed Monitoring

- Place live monitoring at cloud contribution ingest location
- Complete visibility in to the health & performance of the contribution feed
- Realtime analysis of asset availability & contribution encoder quality
- Combine with edge monitoring for end-to-end visibility

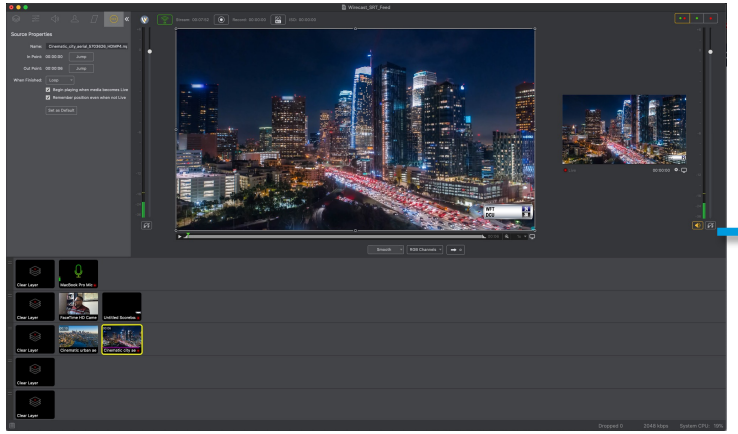
Video Distribution Architecture



AWS MediaConnect Demo Flow

Here is an example flow being monitored through AWS MediaConnect

Wirecast

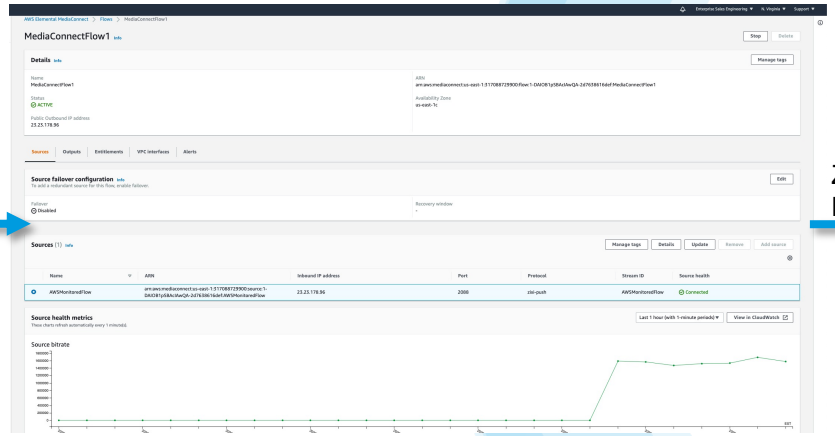


Wirecast publishes to AWS MediaConnect Flow using Zixi PUSH address and info supplied in AWS dashboard

AWS MediaConnect IP: 23.23.178.96
Zixi Port: 2088
StreamID: AWSMonitoredFlow

Zixi PUSH

AWS MediaConnect



AWS MediaConnect Flow configured with Zixi PUSH OUTPUT that will be used to deliver a feed to Stream Monitor.

Must 1st start the Stream Monitor monitoring point, which will generate the URL that you must enter in to AWS to specify where the PUSH feed will be delivered.

Zixi PUSH

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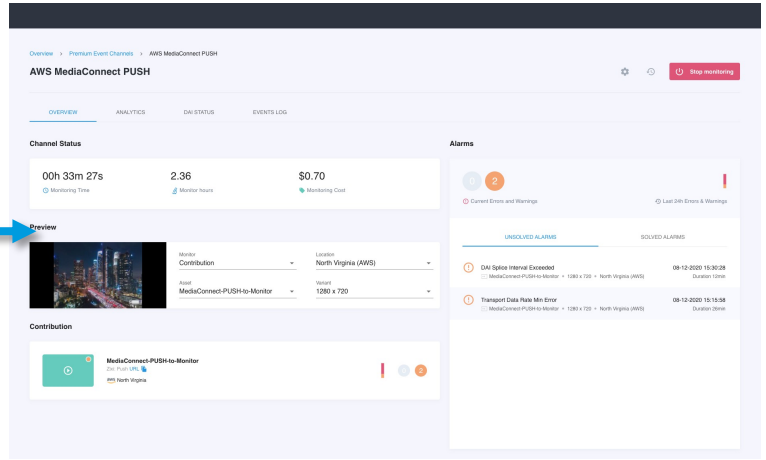

Start the monitoring point, which will create a Zixi receiver address. You need to translate the address to an IP as AWS MediaConnect does not currently support FQDN paths.

Enhanced Stream Monitoring Across Distribution Chain

New! Support for live contribution feed monitoring with Zixi and SRT Protocol support

New! SCTE-35 DAI detection & ad marker signal propagation analysis

New! Correlate performance metrics for all assets in a single channel

New! More powerful alarm templates and trending analysis views