PROTECTED MULTICAST WITH ZIXI

A RESILIENT, RELIANT SOLUTION FOR PROTECTED MULTICAST TRANSPORT OVER ANY IP NETWORK

Zixi's Software-Defined Video Platform (SDVP) enables global media organizations to deliver and manage live, broadcast-quality video across any IP, any protocol, any cloud, and any edge device with low latency, total reliability, and the highest-security protection.

As more and more media companies shift towards virtualizing their infrastructures, the SDVP allows both on premise and remote users to easily and cost-effectively maintain business continuity and securely orchestrate, manage and monitor broadcast quality, low latency live video workflows from anywhere in the world. With Zixi protected multicast, content owners can efficiently send video to multiple destinations over IP without increasing server load and network traffic.

CURRENT CHALLENGES FACED BY DEDICATED NETWORKS

There are many challenges to sending live video over IP.

- Limited visibility into an end-to-end network - No access to control or telemetry

- Inability to provide Root Cause Analysis due to limited visibility

- Inefficient use of network with multicast traffic – bandwidth utilization and link quality issues

- No interoperability with unmanaged networks – how do you go from WAN to LAN

Zixi ensures that high value live video assets that traverse from one point over unmanaged and managed networks are clean, optimized and guaranteed quality.

MULTICAST USE CASES

- Distributed to Remote Facilities – Origin

- Distributed to Remote Facilities – Diversely Hosted

- Distributed to Remote Facilities – Edgepoint Delivery

- Protected Multicast Private Network

- Protected Multicast – Origin – Edge Distribution to Media Business

SOLUTION: THE ZIXI SOFTWARE-DEFINED VIDEO PLATFORM

The SDVP is the tight integration of four crucial elements that enable broadcast-quality live video workflows to be intelligently and centrally provisioned, deployed, managed and monitored using software and integrated devices, regardless of the underlying network infrastructure.

- **Protocols** – Zixi provides an industry-leading congestion and network-aware protocol that dynamically adjusts to varying network conditions and employs error correction techniques for error-free video transport over IP. Zixi is integrated with 17 protocols and containers: Zixi, NDI, RIST, RTP, RTP+FEC, UDP, HLS, CMAF HLS, Low Latency HLS, DASH, RTMP, SRT, Multipath TCP, TCP BBR, RTSP, HTTP, WebRTC

- **Video Solutions Stack –** The Zixi Video Solutions Stack provides essential software tools and core media processing functions that enables broadcasters to transport live video over any IP network, correcting for packet loss and jitter.

- **Intelligent Data Platform –** Using advanced analytics, machine learning and AI, the IDP intelligently alerts users to problems before they happen with graphs, maps, charts and data visualizations that enable users to quickly interpret stream data from a collection of 3 billion + telemetry data points per day, ensuring broadcast-quality streaming results while mitigating risk.

- **ZEN Master –** Zixi provides control over large complex networks with ZEN Master, our Live Video Orchestration and Telemetry Control Plane. This cloud-based interface provides visual and automated tools to configure, orchestrate, manage and monitor live broadcast channels at scale and across industry protocols.

ZIXI ENHANCEMENTS ON STANDARD MULTICAST TRANSMISSIONS

Zixi is the only software to provide a resilient, reliant solution for multicast transport over unmanaged networks. No other multicast solution provides the same visibility to the receiving network as Zixi does. Zixi is the only protocol that can conduct multicast that is not in push mode, meaning that with Zixi, the multicast addresses do not have to be determined in advance of sending the traffic, making for a more flexible and seamless one-to-many or many-to-many transport solution over any IP.

Transmission Features

- ARQ: Efficient re-transmission and congestion avoidance

- FEC: Forward Error Correction is enabled to each multicast client

- Bonding

- Hitless Failover

- AES Encryption

- Adaptive Bit Rate

- No practical Max bitrate for compressed video

- Adjustable Latency

- PID Selection and Normalization

- Auto fallback to Unicast for clients or remote office node that may have issue receiving multicast

- Enhanced QoS across private networks including lower quality circuits

Telemetry Features

- Centrally manage multi-cloud, multi-network workflows internally and between partners

- Ability to orchestrate, monitor and report stream attributes across segments and traverse managed and unmanaged IP networks with unified control plane

- Trace route visibility on signal paths

- TR101 analysis

- Network Analytics

- Device Analytics

- Content Quality and Business Impact Analytics

- AI based Quality Scoring: ePSNR

ZIXI SDVP QUANTIFIABLE RETURNS

- **Root Cause Analysis** – Root Cause Analysis is provided in minutes not weeks, with the ability to isolate and identify problems in the supply chain effectively, across teams

- **Network Bandwidth Optimizations** – Reduce infrastructure utilization, streamline hardware footprints, and reduce unnecessary traffic

- **Scalability with Agility** – Easy to onboard, reduce time of deployment, increase reach of resources

- **Virtualized Collaboration** – Manage and control services across the supply chain of resources and global teams

- **Democratize Operational Resources** – Leverage operational resources and maximize specialized engineering skill sets

- **Achieve Business SLAs and Uptime** – Highest availability, optimal recovery time, manage maintenance downtimes

- **Delivery of Highest Quality of Experiences** – Deliver highest possible Quality of Experience across programming and advertising

ZIXI SDVP BENEFITS

- **Orchestration** – Architect and securely deploy workflows across diverse cloud platforms, global regions and private networks

- **Telemetry** – Extend visibility to endpoints downstream with Zixi protected multicast

- **Interoperability** – 17+ protocols, 200+ integrated partners, open standard transmission options

- **Scalability** – The Zixi Broadcaster software is multi-threaded, so high throughput can be achieved 6Gb+

- **Security** – AES, SSO and password protected

- **Virtualization** – Bridge remote media facilities to maximize value of diversely deployed resources and tools

- **Zixi Sequential Hitless Failover** – Zixi patented hitless failover is extension and improvement of SMPTE 2022-7 with industry leading packet sequence alignment algorithm

- **Bonding** – Zixi dynamically and intelligently manages fluctuating bandwidth, packet loss, and latency differences of individual connections in real-time, to choose the optimal path to route IP packets

- **Low Latency** – Zixi manages latency as an adjustable parameter and assigns latency budgets to achieve desired QoS

ABOUT ZIXI

Zixi provides a cloud based and on-premise Software-Defined Video Platform enabling the management, orchestration, monitoring, and delivery of broadcast-quality live and live linear video over any IP network, protocol, cloud provider or edge device. Over 14+ years, the Zixi Enabled Network (ZEN) of partners has grown to over 300 OEM and service providers with whom Zixi serves well over 700 customers representing most of the top media brands around the world with 20,000+ channels delivered daily. https://zixi.com/

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