Zixi Edge Points

Product Brochure

Zixi Edge Points (ZEP) are made up of the Zixi Feeder and Receiver providing both the entry point to the Zixi Internet video transport architecture and the consumption point. Both Zixi Feeder and Zixi Receiver are lightweight software tools that run on standard PC hardware or are embedded into a wide variety of professional encoders, cameras, and mobile devices as part of the growing Zixi EcoZystem. Zixi Feeder accepts and prepares encoded video for transmission over standard Internet connections using Zixi's UDP-based transmission protocols. Zixi's Transport Stream architecture deploys monitoring, control, and intelligence along the entire transmission path. Zixi Feeder when combined with Zixi Broadcaster Platform or a Zixi Receiver (ZixiLink) is uniquely designed to deliver the quality and reliability that enables professional broadcasters, sports networks, and service providers to adopt IP networks at the core of their operations. Zixi's transport system allows content producers to modernize workflows, improve content availability, while reducing costs and speed setup time.

Zixi Feeder Edge Point

Resides at the Point of Content Acquisition:
- Communicates with Zixi Receiver or with Zixi Broadcaster platform using UDP-based, video-optimized protocols on standard IP networks, including the public Internet
- Accepts input from a broad range of hardware/software encoders and professional-grade cameras
- Mediates between video devices and the Internet, ensuring quality and deliverability
- Easy-to-use graphical administration interface

The benefits of using Zixi Feeder include:
- Provides management and control of video transport at the source
- Removes distance as a consideration for video transport
- Allows content producers to redesign workflows based on immediate availability of content

Zixi Receiver Edge Point
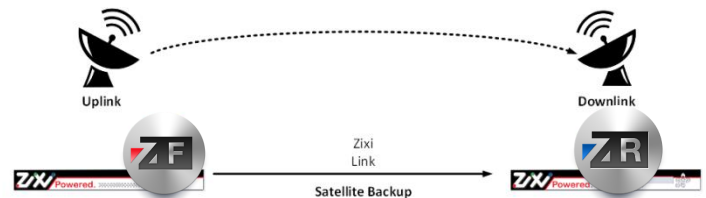
Resides at the End Point of consumption:
- Accepts input from Zixi Feeder or Broadcaster via standard IP networks (including the public Internet)
- Outputs professional-quality video to a broad range of Integrated Receiver-Decoders (IRDs), and to file system
- Zixi Receiver software runs on standard PC hardware, lowering costs and facilitating simple integration into the network

The benefits of using Zixi Broadcaster include:
- Guaranteed delivery of video with the quality originally specified at the entry point
- Elimination of distance as a factor in production
- Ability to distribute live content to multiple sites with low latency
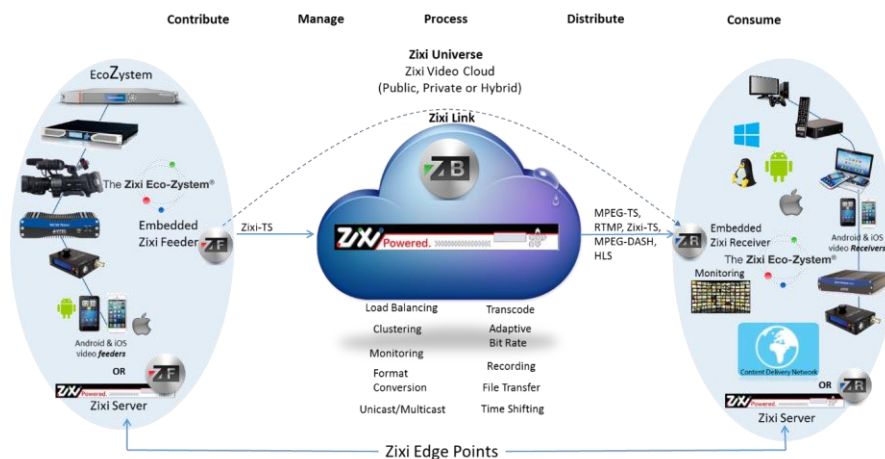
Zixi Eco-Zystem:

The Zixi Eco-Zystem is a growing list of partners who have added support for Zixi Feeder into their encoders, cameras, and software apps.

- Because Zixi is a software solution, integrating Zixi feeder is simple and easy to do.
- The Zixi SDK and accompanying API enable any hardware or software vendor to seamlessly integrate Zixi enabling them to offer a reliable, secure IP delivery option to their customers.
- The Zixi Feeder edge point sits at the content acquisition side and wraps the encoded file in the Zixi Transport Stream and initiates the contribution process.
- Zixi Feeder can run on iOS and Android devices, and is tested with a variety of different processors. Zixi Feeder can also be deployed on a Zixi Server running side by side with a non-Zixi enabled camera, encoder, or software toolset.
- Zixi Feeder can accept MPEG TS or RTP, RTMP, and ASI.

Zixi Edge Point Configurations

- Zixi Feeder Edge Point devices (embedded and non) can be configured to communicate directly with a Zixi Receiver Edge point sending a Zixi transport stream point to point over any distance using a standard internet connections.
- A Zixi Feeder Edge Point can also be configured to send a Zixi Transport stream to the Zixi Broadcaster Platform where it can be managed, modified, and distributed to Zixi Receiver Edge Point enabled devices and non-Zixi Edge Point devices alike.
- With the Zixi platform, content can come from anywhere and can be delivered to any device, anywhere, at any time.

Zixi Edge Point Applications:

- Zixi is running in a variety of different production workflows ranging from sports and Electronic News Gathering workflows, satellite backup, contribution and first mile ingest, Live Event production, and more.
- Live feed - JVC has integrated Zixi directly into its broadcast camera line up enabling Zixi streaming directly from their camera over 4G/LTE or Ethernet through a USB dongle to either the Zixi Broadcaster Platform (On Premise or in the Cloud) or direct to a Zixi Receiver or Zixi Receiver enabled device.
- Increased efficiency – Zixi speed up ENG workflows by requiring fewer people and less equipment to produce a field or in studio broadcast, lowering costs without modifying the production workflow.
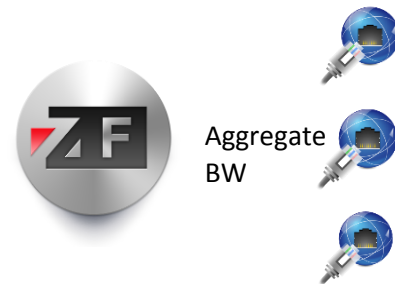
Aggregate BW

Zixi Channel Bonding:

- Zixi Feeder Edge Points now support bonding as part of the Feeder package which aggregates bandwidth from multiple connections.
- This enables the delivery of higher bit rate content using the Zixi protocol over managed and unmanaged networks

Feeder Specifications

Supported Protocols
Input:
- MPEG-TS over UDP (unicast and/or multicast) and/or RTP
- RTMP
- ASI

Output:
- Zixi protected transport to Zixi Broadcaster
- UDP to specified IP address and port
- MPEG-TS output to filesystem

Quality of Service and Error Correction
Transport protocol used among Zixi Broadcaster and Zixi Receiver optimizes bandwidth to deliver broadcast quality

Maximum stream latency can be specified, which is then guaranteed assuming available bandwidth

FEC maximum overhead can be specified as a percentage of the original bitrate

Content-aware forward error correction

Programmable HTTP/JSON API for monitoring, automation and customization

Performance, Availability, and Security
Stream password protection

Stream encryption with up to 256-bit AES encryption

SMPTE 2022 FEC decoding allows recovery of input streams coming from a managed network

Web administration app for configuration

TR-101-290 MPEG stream analysis (priorities 1 and 2)

SSH secure tunnel access to Zixi Feeder for configuration and management

Remote management: connection to 'My.zixi, cloud management system for zixi servers.
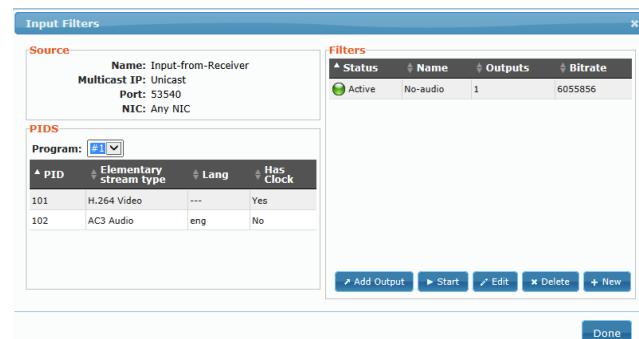
Reliability and Failover
Create output streams from single input

Direct outputs to multiple Zixi Broadcasters, including both cloud-based and self-hosted locations

Demuxing
Support for multi-program transport streams (MPTS): programs may be split into separate single output streams (SPTS).
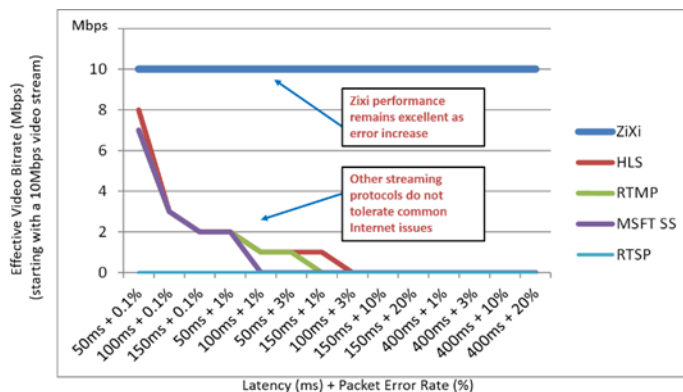

Zixi Feeder allows precise control of multi-program

Filters may be applied to individual programs to create new output streams with specific elementary IDs

Bonding:
Use multiple connections to aggregate bandwidth

Hitless recovery from complete link drops or congestions

Zixi stream resiliency as compared with traditional protocols

Receiver Specifications

Supported protocols

Input:
- Zixi protected transport and/or RTP with SMPTE-2022 support from Zixi Broadcaster located in the cloud and/or on local premises
- MPEG transport stream files from local file system

Output:
- UDP
- Output to compatible ASI cards
- MPEG transport stream output to local file system
- File output segmented by user-selected time interval
- Re-multiplex output streams to strict CBR for extensive compatibility with Integrated Receiver-decoders (IRDs)

Availability and Reliability

Pull streams from multiple Zixi Broadcasters

Ability to assign fallback source to Zixi Receiver output to ensure continuity

Stream monitoring available statistics, throughput, packet rate, FEC, and ARQ measurements

Zixi Receiver pulls streams from Zixi Broadcaster

System Management

Web administration app for configuration SSH access via secure tunnel

Remote management: connection to 'My.zixi, cloud management system for Zixi server.

Security

Stream password protection

Decryption of inbound video using up to AES 256-bit encryption

System Requirements

Supported operating systems:
- Windows® Server 2008; Windows Server 2012;
- Windows 7; Windows 8
- CentOS or Red Hat Enterprise Linux 5.x/6.x 32-bit or 64-bit

Recommended processor: Intel® Core™ i3 dual-core or quad-core
Memory requirements: 1GB
Network interface cards: Minimum of two gigabit Ethernet