



Access Communications Provides Highly Available Video Service with Help from Inca

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Source IP Complexities

Access Communications Co-operative is one of Saskatchewan's largest telecommunications companies providing Internet, television, telephone and security services to homes and businesses in more than 235 communities and rural areas. With a commitment to providing exceptional communications and entertainment services, Access wanted to improve their existing video offering with high availability and reliability in mind.

In their video production system, Access Communications receives video sources as IP streams from two content providers. Both content providers provide a primary and redundant feed for each video service, which originate from different sources.

Access was missing a way to automatically ingest the redundant feeds when the primary source that went down or experienced impairments. This meant that during an outage, the headend engineers would manually re-configure the sources to use the redundant streams and this process could take up to 2 hours.

"Our support center would be slammed with customer calls during an outage," explains Craig Van Ham, VP Technology at Access Communications Co-operative. "An outage resulted in significant downtime and a poor experience for our subscribers. We needed a way to improve the reliability of video services for our customer base and reduce downtime when a provider's feeds become unavailable."

The redundant feeds already existed for the Co-operative to take advantage of. What was missing was a failover mechanism that would automatically trigger in the event of low bitrate errors or other kinds of impairment.

An additional challenge was that the primary and redundant feeds often had their source IP set to the same IP address. Access needed a simple way to differentiate between the primary and secondary feeds when ingested into the network, along with a way to automatically switch between them when errors are detected.



CHALLENGE

- Reduce lengthy service outages when primary feeds are unavailable
- Configure automatic failover solution using redundant feeds from source providers
- Differentiate the primary and secondary feeds that originate from the same IP

SOLUTION

- Add Automatic Service Failover licenses for 300 video services in existing 4400 Modular Series chassis
- Display visual mosaic of all IP streams on a screen in the NOC using the Inca All Seeing Eye for confidence monitoring
- Send SNMP traps from All Seeing Eye to 3rd party alert system

RESULTS AT A GLANCE

- Easy set-up that could be done during the day, without scheduling a maintenance window
- Automatic failover to backup feeds for all outages since deployment - impact to subscribers was low and generated zero customer calls
- Automatic recovery to the primary feeds when errors cleared - no manual re-configuration required by Access engineers



Port Magic

Access Communications reviewed several options. There were multiple devices in the headend that touched the video streams that could be configured to manage the redundancy requirements.

The CherryPicker platform used by Access was considered then quickly dismissed. It wasn't possible to feed this device with streams that shared the same multicast address.

The Inca transcoders became the best option. Access Communications use the 4430 chassis, part of the 4400 Modular Series family, to transcode all 300 video services from MPEG-2 to MPEG-4 AVC. Not only were the Inca transcoders touching every video stream, but

the ability to use multiple ports in the 4430 chassis with streams from the same multicast made it simple to configure. "Multiple ports available in the Inca equipment was key," said Craig. "We created two separate networks. We fed the primary network on half of the available ports and the secondary network on the other half, and then used source settings to specify which port to use. Overall, this was handled in the best way."

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Access ingested the primary and redundant streams into the video network with the 4430 chassis and added additional licenses for Inca's Automatic Service Failover to configure stream redundancy.

Automatic Service Failover is an option available in the 4400 Modular Series that can be configured to automatically use a secondary stream when errors are detected in the primary source. Users can fine tune the feature to monitor specific threshold levels in up to six parameters for up to 16 PIDs in the primary source. Fallback to the primary stream is automatic when errors are cleared.

No Maintenance Window Required

The engineers at Access found set-up and deployment quick and easy thanks to VidiOS™, Inca's award-winning management and configuration tool, accessible via any web browser.

Access Communications first worked with Inca support to define the redundancy parameters and exact thresholds for the low bitrate configuration and continuity errors. "Inca support

were great. We told them exactly what we were trying to accomplish, and they came back with a recommended config," reports Craig. The Access team tested the configuration in a lab environment until they were ready to push to a production network.

"Deployment didn't take long and didn't cause an outage," said Craig. "The team had stream redundancy configured within a day for 300 video services. We didn't even need to bother with a maintenance window - the risk was so low."

Maximized Uptime Achieved

Since the Co-operative went into production with the Automatic Service Failover feature eight months ago, there have

been about four major outages - and none of these outages resulted in lengthy service disruptions or in customer complaints. "With failover in place, the impact to our video customers has been minimal," said Craig. "Before we implemented this, a significant outage would have resulted, and we would have had about two hours of downtime. With the Automatic Service Failover solution, errors only occurred for a few seconds and then we're back in business."

Access Communications was grateful that the Inca equipment automatically flipped back to the primary sources once they returned to normal service. "Without that feature, we would have had to do a lot of reconfiguring very quickly," said Craig. "That would have led to unnecessary service disruptions."

Access uses Inca's sophisticated confidence monitoring tool, the All Seeing Eye, to unite all IP streams from the headend video equipment into one visual mosaic. Access have the mosaic up on a large screen in the NOC so that the support team can easily see when errors are occurring within any of the video services. Access have also configured SNMP traps within the All Seeing Eye to send data to a third-party system that alerts the team instantly of any issues.

With Automatic Service Failover in place, and with the All Seeing Eye deployed to provide monitoring and alerts, the Access team now have a reliable and highly available video service for their subscribers.

Carrier-grade equipment from Inca Networks with intelligent stream redundancy features were paramount in helping Access with this significant achievement.

