Migrating Rural Networks to IP

Farmers Mutual Telephone Company uses REDCOM's SLICE® 2100 softswitch to provide TDM-to-IP call switching and geographic redundancy for rural communities in southwest Iowa

Farmers Mutual Telephone Co. provides phone and Internet services to rural communities in southwest Iowa. During their IP migration, Farmers Mutual needed a softswitch that could serve as a SIP-based gateway between their main IP platform and local TDM legacy networks. They also needed a softswitch that would allow them to achieve geographic redundancy in remote Iowa communities.

Farmers Mutual purchased a REDCOM SLICE 2100 and a REDCOM HDX. The SLICE 2100's SIP-based architecture provided interoperability and superior IP-to-TDM call routing. Farmers Mutual achieved geographic redundancy by placing the SLICE 2100 and the HDX in two separate offices in different locations. The SLICE 2100 offers Farmers Mutual opportunities for expansion into new rural markets, with a lower Total Cost of Ownership (TCO) and lower maintenance costs. Also, Farmers Mutual has found REDCOM to be a superior partner for success, providing support and cooperation to adapt the SLICE 2100's capabilities to the needs of their network.

The Company

Farmers Mutual Telephone Co. (FMTC) is an independent telephone and Internet services company. Headquartered in Stanton, Iowa, Farmers Mutual provides local phone and Internet services to five exchange areas in rural southwest Iowa, including the towns of Stanton, New Market, Villisca, Nodaway, and Bethesda. The company also services five Iowa communities outside their exchange area, including Red Oak, Clarinda, Bedford, Corning, and Lenox.

"We've provided local and long-distance services since 1901," explains Kevin Cabbage, CEO of Farmers Mutual. "As an ILEC, we currently provide services for 1600 telephone lines, and about 1200 Internet subscribers. Also, we've offered video services in Stanton and New Market since 1983. In 2014, we launched our IP-TV video platform, which gives us a statewide franchise, and is available in all our exchange areas. It's been a huge success, and we now have about 725 video subscribers."

"REDCOM's SLICE 2100 is a very comprehensive platform. We were drawn to the capabilities it has to interface with our IP and legacy networks, through SIP trunking and standard TDM circuits. We can easily customize the SLICE 2100 platform to meet what we have going on within our network, and in the different communities we service."

"As of 2016, we will be 100% fiber-to-the-home in all our service areas, including the incorporated towns and rural customers. By year's end, we will have installed close to 750 miles of underground fiber optic cable. Our fiber network connects us to the outside world, through upstream long distance and ISP providers. Additionally, we have partnerships to provide managed IT and cellular wireless service, and a partnership with other independent carriers that forms a 300-mile fiber ring in southwest Iowa."

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The Challenge

For several years, Farmers Mutual has been migrating its services to its IP-based network. However, during the migration, they discovered their existing gateway softswitch did not have the capacity to handle high-volume routing of calls between legacy TDM networks and the new IP platform.

"We've always prided ourselves on providing the fabled 'five 9's of reliability' to our customers," explains Frank Sefrit, IT/IP Network Manager at Farmers Mutual. "As we progressed with our IP transition, the switch we were using for IP-to-TDM call routing could only process a certain number of simultaneous calls and SIP sessions at any one time. We were having call quality issues during high-use periods on our network. Some calls were not completing, while other calls were having one-way audio thanks to an incomplete SIP pairing."

"We needed a SIP-based switching platform that could connect with our SS7-based TDM legacy networks, and provide seamless call routing between those networks and our main IP platform. Also, geographic redundancy and separation of switches are very important to us. We needed a softswitch that we could plant in the local communities we service, to provide standalone call service for those areas if a disaster should ever cut them off from the rest of our network."

"We've developed a strong partnership with REDCOM… Often, it's the people behind the products that make the difference. It excites me to know the people at REDCOM will go the extra mile to ensure their softswitches will provide reliable call routing for our IP and TDM networks and our rural customers."

The Solution

Farmers Mutual Telecom has deployed a REDCOM SLICE 2100 and a REDCOM HDX. Both platforms are carrier-class softswitches that provide an all-in-one platform that includes VoIP call management and seamless IMS interoperability between legacy TDM and VoIP networks through SIP-based architecture.

"REDCOM's SLICE 2100 is a very comprehensive platform," says Cabbage. "We were drawn to the capabilities it has to interface with our IP and legacy networks, through SIP trunking and standard TDM circuits. We can easily customize the SLICE 2100 platform to meet what we have going on within our network, and in the different communities we service. Once we complete our IP migration, the SLICE 2100 is a stable product that will continue to work well with our main IP platform."

Benefits

A Better-Quality TDM/IP Gateway

"The SLICE 2100 is connected to our main IP platform through SIP trunking," explains Sefrit. "It's also connected to our SS7 legacy networks, including our A-links and operator-assisted links. Also, we provide switching for a local Iowa municipality that operates as a CLEC for people in their own community. We've connected their GR-303 network to our own fiber network through the SLICE 2100."

"The SLICE 2100 serves as our gateway, routing calls between our TDM lines and our main IP platform, and converting IP signals to ATM, digital, etc. It handles a higher volume of simultaneous calls than our previous softswitch, and with its superior SIP capabilities, we've eliminated one-way audio and other call quality issues."

Geographic Redundancy

"With our five exchanges, we like to build a tremendous amount of redundancy into our networks," says Cabbage. "Farmers Mutual has two central offices, located in separate Iowa towns about 30 miles apart. We've deployed the SLICE 2100 in one office, and the HDX in the other. This gives us geographic separation of switches, which is an important part of our disaster recovery plan. If a tornado or a power outage strikes one of those towns, and one of our REDCOM switches goes down, we can easily switch call service for our subscribers over to the other REDCOM switch in the other town. And those subscribers will still have long distance service, since both REDCOM switches are connected to the outside world through our fiber network."

"Also, we can buy additional SLICE 2100 units, and install them in local communities. If a disaster happens and those communities are cut off from our regular fiber network, the SLICE 2100 units will provide standalone call service within that area, including call service to local police and fire services, until we can restore the connection."

Scalability for Future Growth in Remote Areas

"One thing we like about the SLICE 2100 is its small physical footprint," says Sefrit. "Each switch easily fits into a rack unit space, which gives us a lot of options for future growth. If we decide to offer competitive services in a new community in southwest Iowa, we can install a SLICE 2100 in a remote utility cabinet in that area, then connect all our new subscribers to that unit through local TDM networks. And with REDCOM's management software, we'll be able to manage all of our remote SLICE 2100 units throughout all of our service areas from our central office, through our SIP connections to those units."

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Security

"I was very impressed with how the SLICE 2100 handled the SIP side of the network internally," says Sefrit. "If your SIP gateway has access to the public Internet, you open yourself up to hackers who can steal your switch's IP address and use it for toll fraud. But the SLICE 2100 operates entirely on our private network, and it doesn't access the public Internet. I feel very comfortable, very safe with the SLICE 2100's security management tools, and with the authentication and encryption levels for the SIP protocols."

Lower TCO

"REDCOM is very competitive with both original and maintenance costs," says Cabbage. "We don't anticipate it will require much attention to maintain the SLICE 2100 units. There's a lot of automated reporting tools, and ease of use with this device. And from a green standpoint, the SLICE 2100 provides energy savings, since it runs on very little power, and doesn't require any extra cooling capability. REDCOM doesn't require service contracts or scheduled maintenance or upgrades. I can see that our maintenance costs are going to be tremendously less compared to products from other vendors."

A Partner For Success

"We really enjoy working with REDCOM's technical support," says Sefrit. "We can call them any time, and get immediate attention. We don't have to go through layers of support personnel to find the right service person. Their people are very knowledgeable, very reliable, and they don't quit until they've solved our problem. Usually, it's a one-call resolution. If we need to execute a creative solution using the SLICE 2100, they don't tell us, 'You can't do that with our product. It isn't possible.' Instead, they help us find a way to adapt the SLICE 2100 to suit the needs of our network."

"At Farmers Mutual, we take the philosophy that we're all in this together," adds Cabbage. "Our success is more about developing good relationships than about putting together technical pieces and parts. We've developed a strong partnership with REDCOM, and the support they've given us has been even more valuable than the products themselves. Often, it's the people behind the products that make the difference. It excites me to know the people at REDCOM will go the extra mile to ensure their softswitches will provide reliable call routing for our IP and TDM networks and our rural customers."

REDCOM offers a complete range of hybrid and pure-IP softswitch solutions designed to help rural telcos reduce their reliance on obsolete systems, contain costs, capture new customers, and generate more revenue by rolling out next-gen and UC services. To learn more, call us today at 585-924-6500 or email sales@redcom.com.

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