

How do I migrate from a 4-wire SCADA system to a fully redundant fiber ring in stages with minimal downtime?

The Scenario:

Murfreesboro, TN, has a population of 150,000 and is located approximately 35 miles southeast of Nashville. The main electric utility provider, Murfreesboro Electric Department (MED), was organized in 1939 as a municipal utility owned by its ratepayers. MED is one of the 155 distributors of Tennessee Valley Authority power. MED needed to expand its network to support the increase of residential and commercial customers. The expansion required upgrading legacy equipment as well as the construction of new substations. MED had limited funds, a restricted time requirement, and could not have an extended period of downtime to accept the additional communications traffic.

The Solution:

MED decided to migrate their 4-wire SCADA system to a dedicated fiber network in stages with eventual full ring protection. They needed to simul-

taneously provide Ethernet access to all substations and selected the RFL eXmux 3500 IP Access Multiplexer to accommodate their requests. The eXmux transported SCADA from each RTU, TWACS data, and for LAN in each distribution substation. In addition, MED will use the eXmux for video surveillance. Eventually, MED wishes to implement a ring protection with redundant paths that will utilize automatic switching as well as provide Ethernet network access to all substations.

The Results:

The customer was able to successfully expand and upgrade their network with minimal downtime. In addition, MED will add to its six currently installed eXmux 3500 units incrementally to create a fully redundant network and provide zero-data loss in the event of an outage, without going over budget. Serial server interface units offered a simple way to add additional RTU sites to existing SCA-

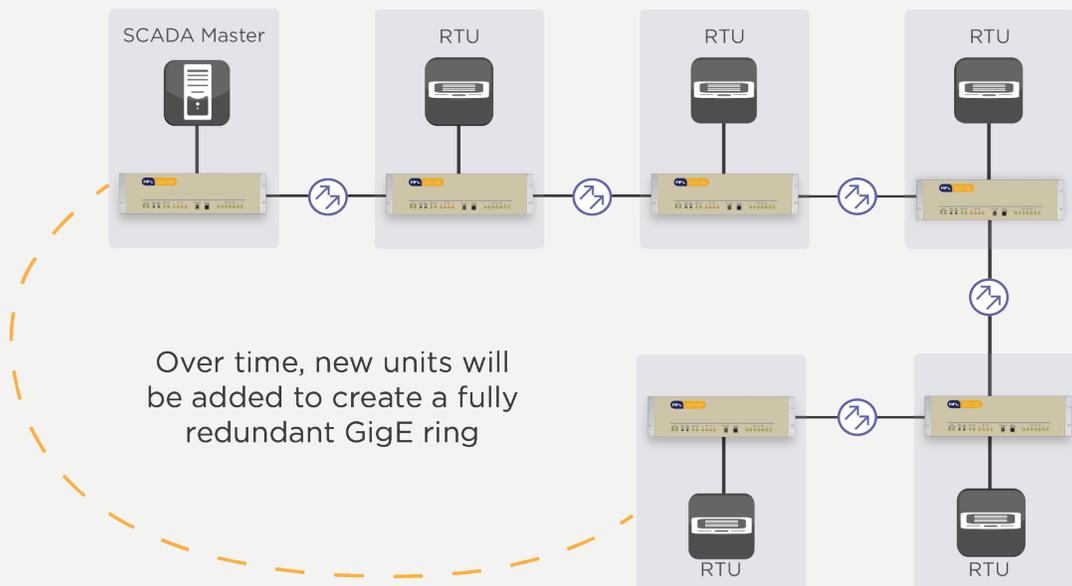


Figure 1: Murfreesboro Electric current linear eXmux 3500 system before second stage upgrade

DA groups created in eXmux VNMS. The GigE fiber optic network will continue onto distribution substations and to their control centers. The flexibility of the eXmux 3500 provided a simple way to add additional RTU sites to an existing SCADA Group created in eXmux3500 VNMS, without sacrificing time or going over budget.

Related Products:



eXmux 3500

The RFL eXmux 3500 is a substation-hardened IP

Access Multiplexer engineered for mission critical infrastructures to transport voice, serial, relaying protection, SCADA, video and Ethernet data communications over Ethernet/IP or MPLS networks,

providing the flexibility of backward compatibility with Ethernet devices on the same communications platform.

About RFL

RFL designs and manufactures a comprehensive line of highly-reliable, mission-critical, cost-effective communications and protection solutions for the electric utility and transportation markets, oil and gas markets, government agencies and engineering consulting firms. RFL is focused on guaranteeing mission-critical data will arrive on-time, every time.



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