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Reliable Connectivity in Oil Fields Gives GR Energy Services Access to Real-Time Data

INS Optimizes GR Wireline IT Operations With Cloud Management, Dual-Modem Flexibility & Mobile SD-WAN

SUMMARY

GR Energy Services had been expanding the reach of its oilfield measurement equipment aboard wireline trucks throughout the United States, but one missing component was greatly hindering operational efficiency: Network connectivity and the ability to securely access real-time data remotely.

INS implemented Cradlepoint's cloud-managed, all-in-one routers in each vehicle that gave GR reliable connectivity, comprehensive security, and robust cloud management tools it needed to increase efficiencies and reduce money spent on network appliances, data plans, and IT and engineer man-hours.

SOLUTION:

INS IT SERVICES, COR IBR1700, NETCLOUD MANAGER, CP SECURE WEB FILTER, CP SECURE THREAT MANAGEMENT

APPLICATION:

DUAL-MODEM FAILOVER, MOBILE SD-WAN, WIFI, CONTENT FILTERING, CLOUD MANAGEMENT

MARKET:

ENERGY & UTILITIES - MOBILE

CUSTOMER PROFILE

GR Energy Services — headquartered in Sugar Land, Texas — is a completion and production solutions company that helps oil and gas companies safely deliver more profitable wells through unique proprietary equipment and services. The organization has grown rapidly.

> *"The edge that we have is being able to make changes in the oil fields, on the fly,"* said Elias Santiago, *information technology director at GR Energy Services.*

ORGANIZATIONAL NEEDS

On GR's wireline trucks, highly specialized equipment measures and monitors a variety of conditions inside oil wells. In the past, these systems did not include Internet connectivity, which proved problematic when equipment failure would arise. The field engineer on location would have to call the senior technical engineer, who lacked access to real-time metrics, and the two would talk through the problems over the phone. If unable to address the challenge, the senior technical engineer would have to drive — at times seven or eight hours — to the well for in-person inspection.

With efficiency in mind — and with a new real-time, on-site invoicing process on the horizon — GR began connecting its vehicles to the Internet and to the company network. However, that decision presented a new set of challenges.

Perhaps the biggest issue was the remoteness of many of the oil well locations, especially in western and southwestern Texas. Cellular connectivity was a must, but it had to be flexible enough to support multiple carriers.

> *"Usually these wells are way out in the middle of nowhere. In those areas, connectivity is spotty at best. So, we asked ourselves, 'How do we get consistent connectivity?'"* said Santiago.

GR tried hotspots, but they lacked the security, flexibility, and control the company sought. One clear need was the ability to easily set up secure VPNs and implement vulnerability management technologies.

The organization also wanted to prevent employees from running up huge cellular data charges with high-bandwidth video streaming on sites such as NetFlix and Hulu.

> *"As we started tacking on all of these requirements, most solutions weren't going to meet all of our needs,"* said Santiago.

SOLUTION

To address all of its connectivity, security, and network management needs through a single device, GR deployed Cradlepoint's cloud-managed and software-defined dual-modem mobile routers in all of its line trucks. The solution is delivered through Cradlepoint's NetCloud platform.

> *"With their network expertise, INS was able to design a solution which met all of our requirements and templatize it for our deployment,"* said Santiago.

Cradlepoint's purpose-built in-vehicle solution provides Unified Threat Management (UTM), multi-zone firewall, web content filtering, and Intrusion Prevention and Detection Systems (IPS/IDS) through TrendMicro.

BENEFITS

RELIABLE CONNECTIVITY & WIRELESS-TO-WIRELESS FAILOVER

GR uses Cradlepoint's high-performance 4G LTE routers with dual-modem functionality, facilitating automatic and instant cellular-to-cellular failover whenever one carrier's coverage drops off.

GR also leverages load balancing for additional bandwidth from the secondary carrier whenever necessary.

> *"Having multiple carriers supported through one device gives us the flexibility to keep our trucks connected all the time — even in the middle of nowhere,"* said Santiago.

NETWORK TRAFFIC STEERING WITH MOBILE SD-WAN

Cradlepoint's Software-Defined WAN (SD-WAN) functionality is built into NetCloud OS, optimizing primary and hybrid LTE connections. Using Smart WAN Selection, GR intelligently monitors primary WAN link performance and provides smart, automated failover to the secondary modem when the connection degrades based on preset metrics for latency, jitter, signal strength, and data usage.

> *"Using SD-WAN technology in our vehicles adds automation and traffic steering capabilities that are based on preset policies instead of on our own time and resources,"* said Santiago.

REMOTE ACCESS TO REAL-TIME DATA

Without reliable online access to real-time data, one of GR's senior technical engineers had been driving significant distances to well sites for service calls. With always-on connectivity, GR avoids such trips to the field, saving significant time and money.

> "Our senior technical engineers can provide troubleshooting and training from headquarters, at home, or anywhere else."
>
> — Santiago, *GR Energy Services IT Director*

REDUCED DATA CONSUMPTION WITH WIFI-AS-WAN

GR uses Cradlepoint's WiFi-as-WAN functionality to reduce cellular data consumption by prioritizing WiFi over 4G LTE anytime a truck is at headquarters. With Cradlepoint's fit-for-purpose routers, which feature dual radios (2.4 GHz and 5 GHz), vehicles automatically switch to WiFi-as-WAN when they return home, then back to cellular connectivity once they leave.

CLOUD-BASED NETWORK MANAGEMENT

NetCloud Manager collapses all of GR's network management duties for widely distributed trucks into a single pane of glass. WAN access can be monitored and managed easily from anywhere, and NetCloud OS, security updates, and custom apps can be pushed out to every vehicle instantly and simultaneously.

"With INS IT Services, our units are shipped pre-configured and ready to install. They manage our configurations, network updates, and provide any support needed in the field," said Santiago.

DATA SECURITY & WEB CONTENT FILTERING

With a built-in stateful firewall, CP Secure Web Filter, CP Secure Threat Management for IPS/IDS, and a constant VPN tunnel back to its data center, GR has the information security it needs without the cost of additional hardware.

"The ability to block unwanted website usage and protect our employees and network from malicious sites has been extremely valuable," Santiago said.

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