

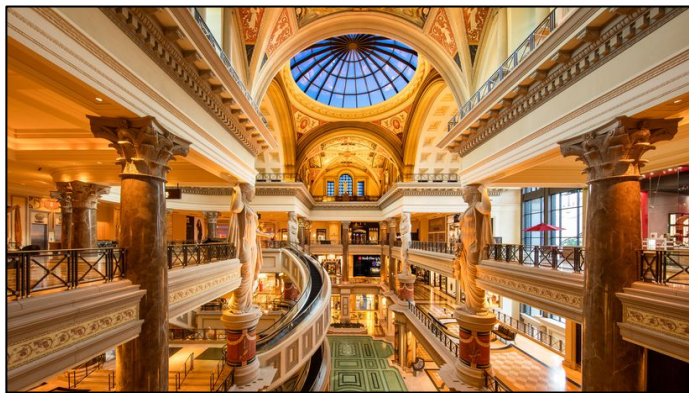


CASE STUDY: Fashion Show Mall & Caesars Forum Shops

ReadyLinks Improves Customer Experience with Symmetrical Gigabit Speeds Over Existing Copper Infrastructure.

OVERVIEW

The Forum Shops at Caesars Palace, also known as Forum Shops Mall, and Fashion Show Mall are upscale shopping centers located on the Las Vegas strip in Paradise, Nevada. Built in 1980s, both malls combine for over 400 retail tenants, dozens of restaurants & clubs, thousands of digital displays, & over fifty million retail visitors every year. With combined revenue in the billions, these malls represent two of the largest malls in Nevada.



Caesars Forum Shops



Fashion Show Mall

MEETING THE DEMAND

Millions of devices, and thousands of daily, IP-based, transactions mean reliable high-speed bandwidth is a requirement. Because both malls were built in the 1980s, Internet Service Providers (ISPs) servicing tenants at the mall had two options to provide Internet to these retail destinations: run new cabling or use the existing infrastructure.

Installing new cable, referred to as an overbuild, was time consuming, labor intensive, and expensive. Since an overbuild was not a financially sound investment, that meant these providers turned to using existing copper infrastructure, which traditionally translates to connecting via DSL. When compared to pulling new cable, DSL can be deployed in a fraction of the time but, does not support the speed and reliability required for millions of IP connected devices and billions of dollars in transactions.



ReadyLinks Product Portfolio

THE CHALLENGE

1. Providing a reliable, and cost-effective, method of delivering high-speed Internet service to retail tenants
2. Creating a manageable, stamp & repeat model, that can be applied to any application with the same constraints

LUMEN INNOVATIONS - READYLINKS

Since the early 2000s, Lumen Technologies (formerly CenturyLink), through their innovations team, has been working with ReadyLinks Inc., a cloud networking company who manufactures enterprise grade, fiber over copper, equipment. ReadyLinks specializes in manufacturing cloud managed equipment capable of providing fiber speed, and power, over just 1-pair of copper. The ReadyLinks solution set revolves around three key drivers:

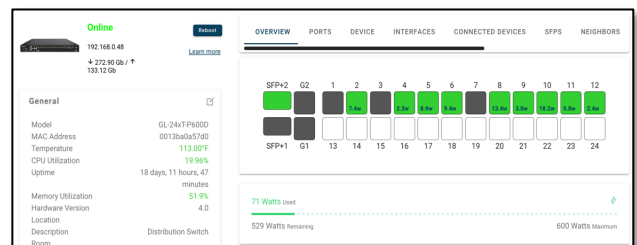
1) Purpose Built Hardware

ReadyLinks hardware is capable of providing symmetrical Gig connectivity, and remote power, up to 1,000ft over existing copper infrastructure. ReadyLinks features an expansive product portfolio ranging from modular line card switches, hardened switches, and compact edge devices with varying port density options.

2) Network Monitoring, Management, & Inventorying

Another of ReadyLinks unique selling points is its API integrated remote management software, ReadyView, which enables:

- Equipment inventorying
- Automated provisioning
- Anomaly detection and mitigation
- Remote cloud management of devices



ReadyView Device Dashboard

Product	Mac Address	Name	Port	Distance	Health	Download	Upload	Temperature	Throughput	Location
	0013ba0b5614	IPC-2TC	Ghe1	1131.89 (ft)	100%	0.17 Mbps	0.26 Mbps	132.87 °F	356 (mbps)	Ferrisgo
	0013ba0b565f	IPC-2TC	Ghe2	1102.36 (ft)	100%	0.06 Mbps	0.48 Mbps	142.47 °F	378 (mbps)	Le Sabo
	0013ba0b563d	IPC-2TC	Ghe3	1089.24 (ft)	100%	0.12 Mbps	0.16 Mbps	142.47 °F	530 (mbps)	T2D
	0013ba0b3a80	IPC-1T	Ghe4	1105.54 (ft)	90%	1.14 Mbps	2.04 Mbps	168.53 °F	164 (mbps)	
	0013ba0b3a8b	IPC-1T	Ghe5	1010.30 (ft)	100%	0.13 Mbps	0.17 Mbps	165.79 °F	333 (mbps)	
	0013ba0b7097	IPC-2TC	Ghe7	1010.30 (ft)	100%	0.05 Mbps	0.03 Mbps	146.59 °F	430 (mbps)	
	0013ba0b7075	IPC-2TC	Ghe9	1164.70 (ft)	100%	0.57 Mbps	0.42 Mbps	150.01 °F	325 (mbps)	
	0013ba0b2a79	IPC-1T	Ghe10	944.88 (ft)	100%	0.24 Mbps	0.37 Mbps	159.62 °F	346 (mbps)	
	0013ba0b3a6e	IPC-1T	Ghe11	544.62 (ft)	28%	3.77 Mbps	0.66 Mbps	128.75 °F	92 (mbps)	

Edge Device Management

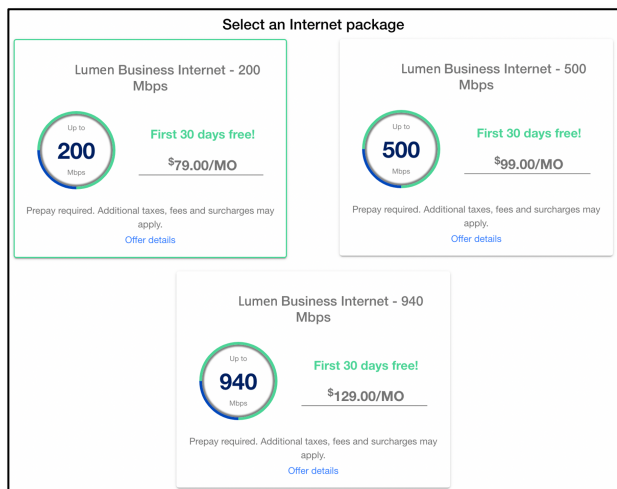
“They bring vast knowledge of cloud managed multi-gigabit networks ... that leverages existing infrastructure”

Livia Rosu

President, HomeGrid Forum

3) Automated Subscriber Billing and Activation

ReadyLinks offers a web-browser based, no-code required, subscriber activation & billing management platform: ReadyOn.



ReadyOn Service Levels

ReadyOn enables:

- Out-of-the-box instant activation buy flow
- Custom service levels
- Subscriber management
- Custom pricing by location
- No-code, fully customizable
- Native integration with ReadyView
- Automated & recurring subscriber billing

“ReadyOn™ is a zero-touch provisioning solution that allows a customer to be in charge of their service. Lumen is focused on providing the best customer experience it can and ReadyLinks is a valued partner in this effort.”

Tom Barnett

Director of Strategic Innovation, Lumen

Vice President, HomeGrid Forum

INNOVATIVE SOLUTION

In March of 2018, the Lumen network team tapped ReadyLinks cloud-managed networking expertise to help support the roll out of high-speed connectivity over existing copper infrastructure to two of Nevada’s premier shopping destinations.

The upgrade process was simple: instead of removing any existing cabling, copper technicians simply installed the ReadyLinks equipment right on top of the existing internal wiring in the cable closets. In a matter of two weeks, all tenants in the mall were symmetrical gig enabled. From there, all the technicians had to do was ReadyOn enable the site and wait for subscriptions to roll in, which they did, in record time.

“For over three years now, this solution has worked wonderfully for our customers and helped us win again at some of the most premier retail locations in Las Vegas.”

Mike Jewell

Sr Director Network Service Operations, Lumen

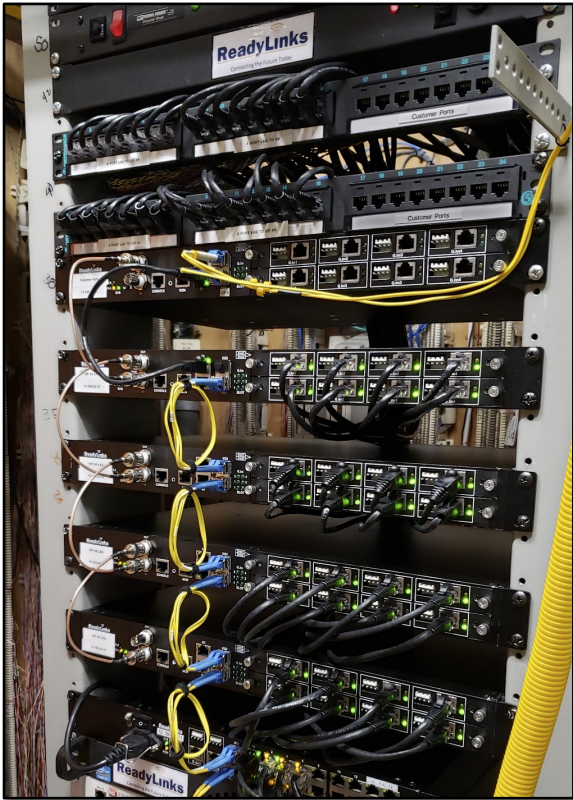
“The ... ReadyLinks system has shown significant increases in very competitive markets. Over the last 3 years, ReadyLinks has proven to provide reliable hardware and flawless support

Dan Roy

COO Retired, Stations Casino



ReadyLinks Installation



ReadyLinks High-Speed Copper Network

RESULTS



3500%

Average performance increase across connected subscribers



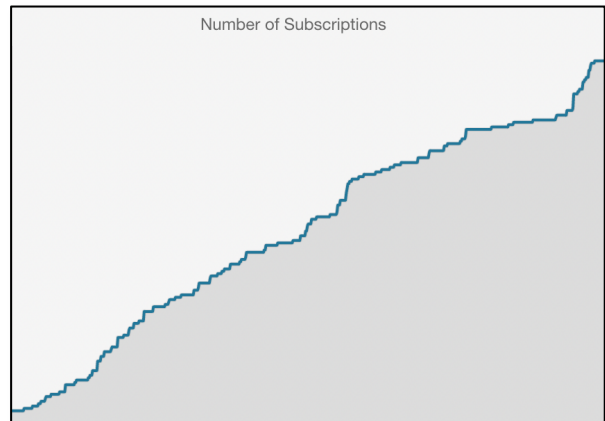
100%

Proven year-over-year revenue growth in MTU deployments



80%

Cost savings when compared to pulling new cable



ReadyOn enabled subscriber growth trend line

Following the adoption of ReadyLinks and their automated cloud provisioning platform, Lumen has realized significant efficiencies and cost savings across several key business areas including sales, networking, and operations.

“Selling this stuff is like selling water in the desert, everyone needs it”

Michael Puccio

Communications Specialist, Lumen
