



## WHITE PAPER

# Building a Resilient Retail Network

A reliable network infrastructure is vital as more and more data is sent over our networks and much of the processing happening at branches and other edge locations. Unfortunately, outages are often beyond your control. But that doesn't mean that there is nothing you can do to mitigate downtime. With an Out-of-band (OOB) management system, you're ready to handle outages, mitigating downtime, retaining revenue and saving you from brand damage.

As a retailer, you depend on having a reliable, resilient network. Downtime means slow checkout lines and angry customers. An estimated 1 out of 3 shoppers will leave if they have to wait more than 5 minutes, and some will never come back, according to *CompuCom's Beating the High Cost of Retail Technology Downtime*<sup>1</sup>. The effects of retail network downtime can be catastrophic, leading to missed sales and interrupted communication with inventory databases, security systems, point-of-sale systems, and even digital signage. Every outage impacts your customer loyalty and employee productivity and hurts your overall business operation.

When an outage occurs, your customers are more likely to take their business elsewhere and express their frustration via social media. Having a failover solution with monitoring and incident management capabilities can keep your customers happy, your data secure, and your store's reputation intact.

This paper takes a look at the costs of retail branch downtime and ways you can build a more resilient retail network with a lower Mean Time to Repair and fewer truck rolls.

## IMPACT OF RETAIL NETWORK DOWNTIME

According to *ITIC's 2017 Reliability and Hourly Cost of Downtime Trends Survey*<sup>2</sup>, 98% of businesses with at least 1,000 employees say that, on average, a single hour of downtime per year costs them more than \$100,000 and 33% report that an hour of downtime costs their company \$1 million or more.

Another recent study, *The Cost of Downtime: Beyond the Bottom Line*<sup>3</sup>, surveyed retail managers and supervisors regarding business productivity and sales related to connectivity.

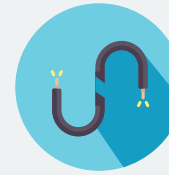
Here are a few of the findings from the study:

- **81%** have downtime at least once a year.
- **87%** have to wait up to 4 hours for support after an outage.
- **61%** can't process credit cards during a network outage.
- **82%** report that network downtime leads to a negative customer experience.
- **72%** lose sales during an outage.
- **36%** believe they are more vulnerable to security breaches during an outage.

## WHAT CAUSES OUTAGES?



ISP Carrier Issue



Fiber Cut



Human Error

System outages can result from a variety of factors which can include human error, environmental conditions and network elements.

ISP carrier issues, fiber cuts and cable interconnects are just a few network elements that may cause potential problems. Network devices are increasing in complexity. As software stacks require frequent updates, they become more susceptible to bugs, exploits and cyber attacks causing more outages.

## HOW LONG ARE OUTAGES?

In *The Cost of Downtime*<sup>3</sup>, a majority of respondents reported when the network is down, it can take up to four hours to get back in service. In the event of an outage, most retailers surveyed said they would close within 2 hours. Fewer than 25% reported that they would stay open the whole day waiting for support.

Retailers are severely limited in what they can do during an outage and the costs far outweigh the revenue earned. Without a connection, 61% of retailers can't process credit cards, and more than half of retailers see a decrease in employee productivity.

Downtime presents major security risks as well. The study found that more than half of retailers can't enable security systems during downtime, leaving themselves vulnerable to data breaches.

Despite the dire impact of downtime, 20 percent of those retail businesses surveyed didn't have backup connectivity solutions in place.

Technologies like POS and security systems need a resilient, secure network. Retailers can plan ahead to mitigate interrupted network connectivity and avoid the disastrous consequences of downtime.

## THE LAST MILE PROBLEM

Cloud services and SD-WAN are becoming a core part of many retail businesses. And while connectivity has improved over the past few years, one weakness these technologies don't overcome is the last mile problem. The last mile is the final segment of the WAN network that connects your retail store, your data centers, and your distribution outlets to your SD-WAN and cloud services. These last miles are the weakest links in your connectivity.

All of the network traffic for a single store, branch, or distribution center is funneled through single links. The bandwidth of these links effectively limits the amount of data that can be transmitted to your ISP. This bottleneck can leave you exposed to DoS attacks or basic human error leading to outages. And this last mile can even be vulnerable to physical issues. An accidental fiber cut can knock out your entire network and leave you in the dark for a significant period of time.

## LAST MILE SOLUTION

The last mile is the weakest link between your establishment and your SD-WAN and cloud applications.

To protect your business against the last mile, you need a solution that offers your network added bandwidth and availability. Ideally, you need to achieve uninterrupted Internet connectivity for your branch LANs and equipment over a link that is not part of your last mile.

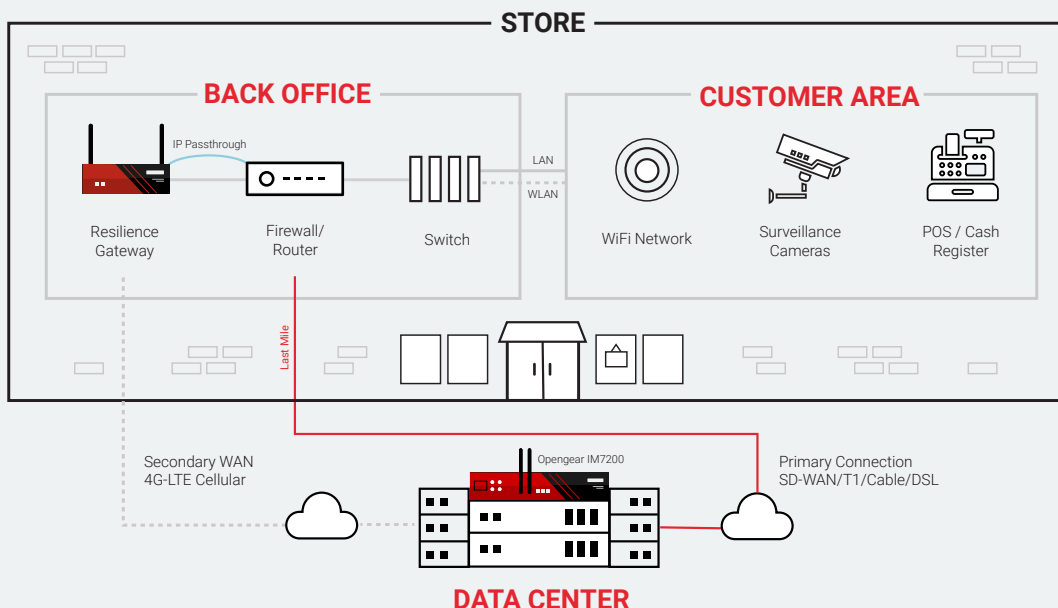
You can leverage high-speed 4G LTE or 3G networks whenever your primary link is unavailable. One solution is to use *Smart Out-of-Band with Failover to Cellular™ (F2C)* technology. *Smart OOB™* detects outages and Failover to Cellular takes advantage of a different network path not connected to your last mile. This offers you enough speed to keep your network running smoothly. It also gives you WAN resilience. And Network Engineers can get the network back up and running without an on-site visit.

## SD-WAN AND SMART OOB

*Smart OOB* is also useful for an SD-WAN deployment. SD-WAN enables organizations to reduce costs and maintain secure network connections, however the high bandwidth internet connections, routers, and frequent firmware updates result in a single point of failure. If the network goes down during a deployment, *Smart OOB* with Failover to Cellular offers you access to the routers to power cycle or reflash devices.

## WHAT IS OUT-OF-BAND?

The term Out-of-Band or OOB usually refers to a network strategy that provides an alternative path to devices located at remote sites when the primary network is down. OOB management gives network administrators a way to securely monitor, access and manage devices without impacting normal operations. OOB solutions can integrate seamlessly with existing IT network and management systems. They minimize network disruptions with an always-on-connection.



## CASE STUDY

### Retailer Ensures Business Continuity and Simple Deployment with Resilience Gateways

A large U.S. furniture retailer needed reliable and resilient network connectivity for its nationwide retail stores, delivery centers, and data centers. This growing business also needed help to streamline and accelerate the setup of new locations.

This retailer has found a set-it-and-forget-it solution, with network connectivity that remains available during network disruptions.

*“When our MPLS connection does go down, we don’t necessarily know it – we don’t get flooded with phone calls from the location, because Opengear’s pick-up over LTE is seamless. Because this technology is running, the idea of downtime is no longer something that I lose sleep over. I’ve been in other large retail organizations where when there’s some storm or natural disaster or something else that affects the broader carrier infrastructure, it causes panic because you don’t know what you’re going to lose and for how long. But with Opengear providing LTE-powered backup, you just don’t worry about it.”*

~ Network Engineer

When setting up their newest store locations, the company uses Opengear’s LTE modem functionality to establish remote connectivity and perform site setup activities.

One of this customer’s outlets suffered a severe circuit outage that lasted for several weeks, leaving the store without its primary method of connectivity. However, the store was able to use only Opengear’s LTE connection and keep their business up and running.

## ZERO-TOUCH PROVISIONING

Having the ability to quickly deploy or replace technology at new or existing branches poses another challenge for retail. Zero Touch Provisioning (ZTP) can help. ZTP lets managed devices in their unconfigured state request initial setup resources through the local management network. This means that the provisioning is automated, meaning less need for expensive manual intervention and skilled technicians on-site.

## RETAIL NEEDS A RESILIENT NETWORK

Outages are bad news for retail, but they will happen because of the increasing complexity of network devices, the last mile vulnerability, and the complexity of modern software stacks and hardware devices. To keep your customers happy and your company’s reputation intact, your retail business must be prepared for outages. *Smart OOB with Failover to Cellular* keeps your branches open even when your primary network is down.

1. [CompuCom, Beating the High Cost of Retail Technology Downtime](#)
2. [Information Technology Intelligence Consulting](#) conducted a survey, [ITIC’s 2017 Reliability and Hourly Cost of Downtime Trends Survey](#)
3. [Accelerated Concepts](#) conducted a research study, [The Cost of Downtime: Beyond the Bottom Line](#)