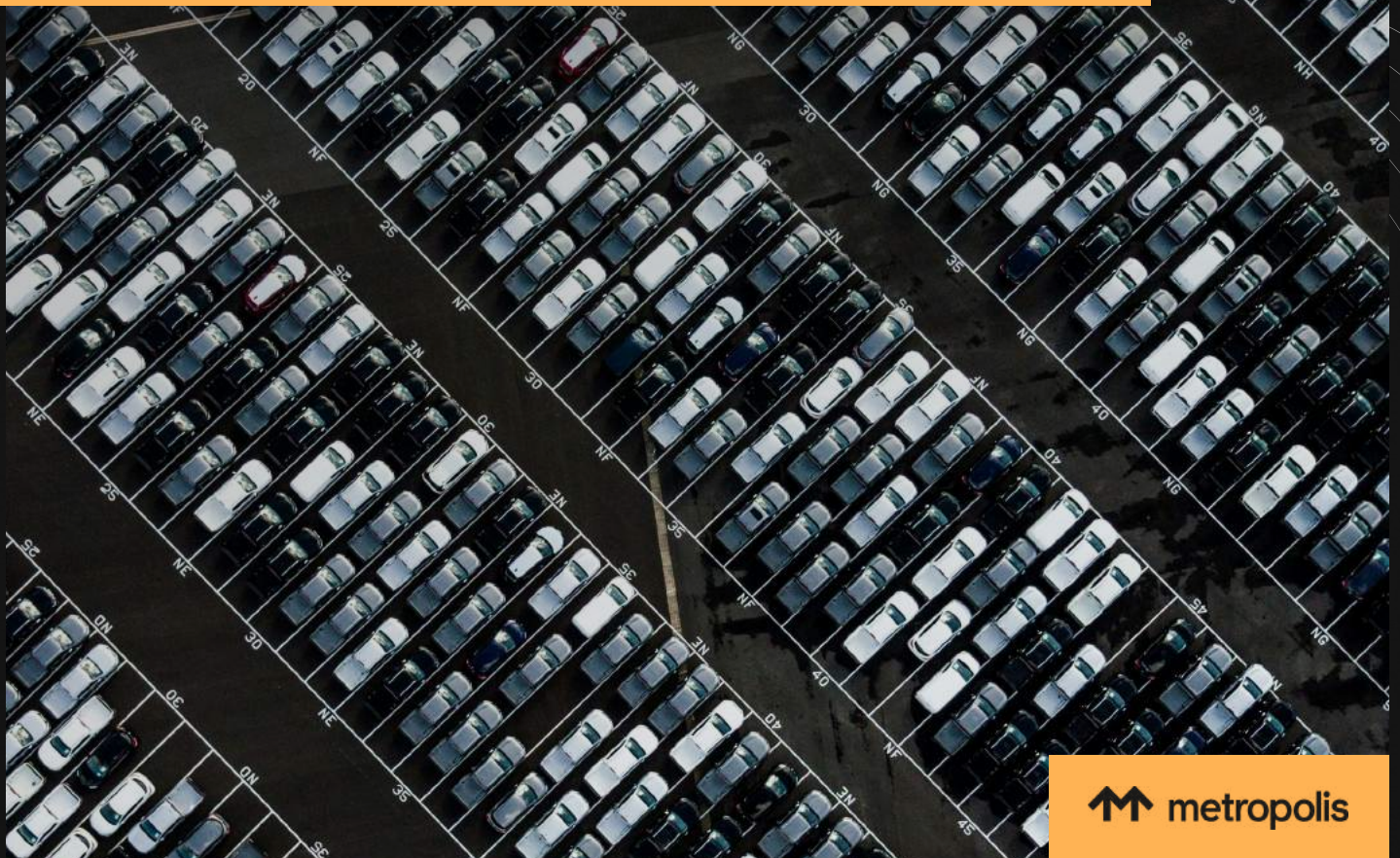
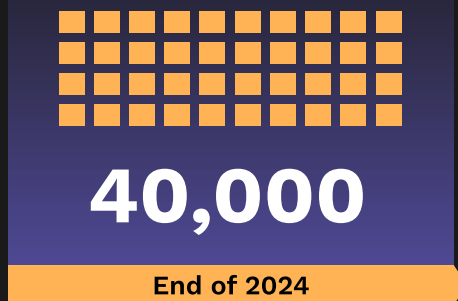
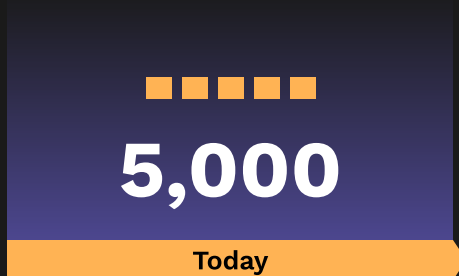


# A (Parking) Lot of Options

**Metropolis** needed to remotely manage a huge number of devices in parking facilities, including securely transmitting and receiving data in difficult geographies. ZeroTier removed all the roadblocks.



## Devices deployed across the U.S.



**Imagine this scenario.** You need to deploy, access, and maintain hundreds of remote hardware devices. Your routers, cameras, sensors, and other devices are installed in locations around the country, far from qualified repair technicians, in facilities that you don't own or control. Yet the devices have to work around the clock; livelihoods are at stake.

Now imagine that one of those devices stops working. How do you respond?

Todd Shipway didn't need to use his imagination. This was the challenge he faced when he began his tenure as head of Technical Operations at Metropolis ([www.metropolis.io](http://www.metropolis.io)).

**“ZeroTier gave us performance and scalability without extra configuration. That let us really get in and design the solution we needed.”**

**Todd Shipway**  
Head of Technical Operations at Metropolis

Metropolis uses computer vision to enable vehicles to act like wallets. The company specializes in the parking industry today, serving parking garages and other similar facilities. But it's expanding to other industries where checkout-free experiences are appreciated.

The technical challenge: Metropolis needs to remotely connect and manage a huge number of devices. The company needs to securely transmit and receive data. And the Metropolis networking team has to respond quickly when something goes wrong.

The initial process of managing a complex network topology across disparate networks was time consuming and required manual intervention, Shipway said. Often, to make even a simple change, someone had to physically interact with the equipment on site. Worse, the performance was terrible, and security was a real concern.

That situation was untenable. Shipway either needed to hire a massive number of people, or it had to find a better solution.

He found one in ZeroTier.

# Speed bumps

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As Shipway envisioned it, the Metropolis parking solution would depend heavily on automation, and would leverage the company's own custom hardware. That system needs a lot of flexibility, which means Metropolis can't rely on off-the-shelf (OTS) equipment.

Shipway explored several options to manage devices before settling on ZeroTier. But quite a few, such as VPN technologies, locked him into doing things in one particular way. "They wouldn't support some of the things we needed to do from a customization perspective," he said, which would prohibit Metropolis from scaling its offerings.

In contrast, ZeroTier let Shipway use the technology the way he needed to use it, including from an automation perspective. "They gave us the performance and scalability we needed without extra configuration. That let us really get in and design the solution we needed," he added.

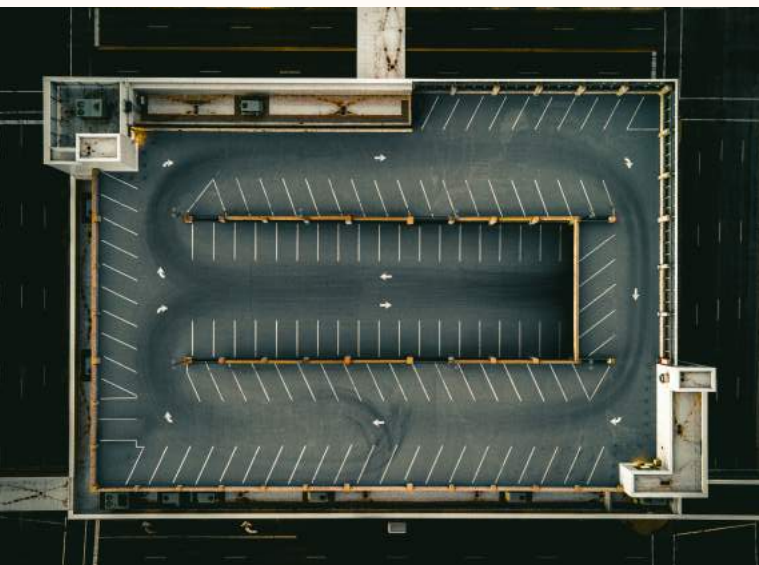
Metropolis deploys its custom network hardware – firewall switches, cameras, routers, compute boxes – in remote facilities all over the country. Today, about 5,000 devices are deployed; it'll be 40,000 devices by the end of 2024. Within two years, Metropolis will manage more than 100,000 devices across the U.S.

All those devices link back to the company's cloud services, securely, where the more complex processing takes place. "They are all connected," Shipway stressed.

**"There is not a single device that we cannot manage remotely."**

The network is managed using a fully automated self-healing feature. When a device or the infrastructure encounters a problem, the system attempts to solve it automatically. If it cannot, it reports the issue. ZeroTier has made that possible.

ZeroTier enables a light touch on deployment, too. "I want to go to a site. I wanted to pull hardware. I wanted to get it connected, and I wanted it to happen in a matter of minutes," Shipway explained. Baking ZeroTier into the Metropolis hardware design has made that goal completely feasible. "I only need an internet connection, a very basic internet connection," he said. "It can be any old internet connection. We do this all day long on 4G with no problems."





# Paving a new path

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Working with ZeroTier gave Metropolis new options – but to accomplish them, Shipway had to think through possibilities he hadn’t previously contemplated. For instance, his team needed to rethink how to segment its network to support various device types and regions. But as they planned the project, “We realized we could automate more than we had thought,” Shipway said.

The developers investigated the range of ZeroTier’s feature set in depth. “We got to the point where we realized,

**“Now that we can link that and do something with this, it unlocks A, B, and C,” Shipway said. And then we realized, “We can also automate D because we can do C.”**

For example, the team needed to get a connected device’s IP address under certain circumstances. Working with ZeroTier helped design the system so that a notification could be sent when a new device comes online – which opened up a whole new way to do automated provisioning. “That ability has allowed us to get to a zero-touch provisioning model,” Shipway said.

A word of advice: Expand the conversation as you work through the possibilities. If you’re planning a ZeroTier deployment, Shipway recommends allocating time to share the design with the people in your company who don’t necessarily think about routing protocols.

# Full stop

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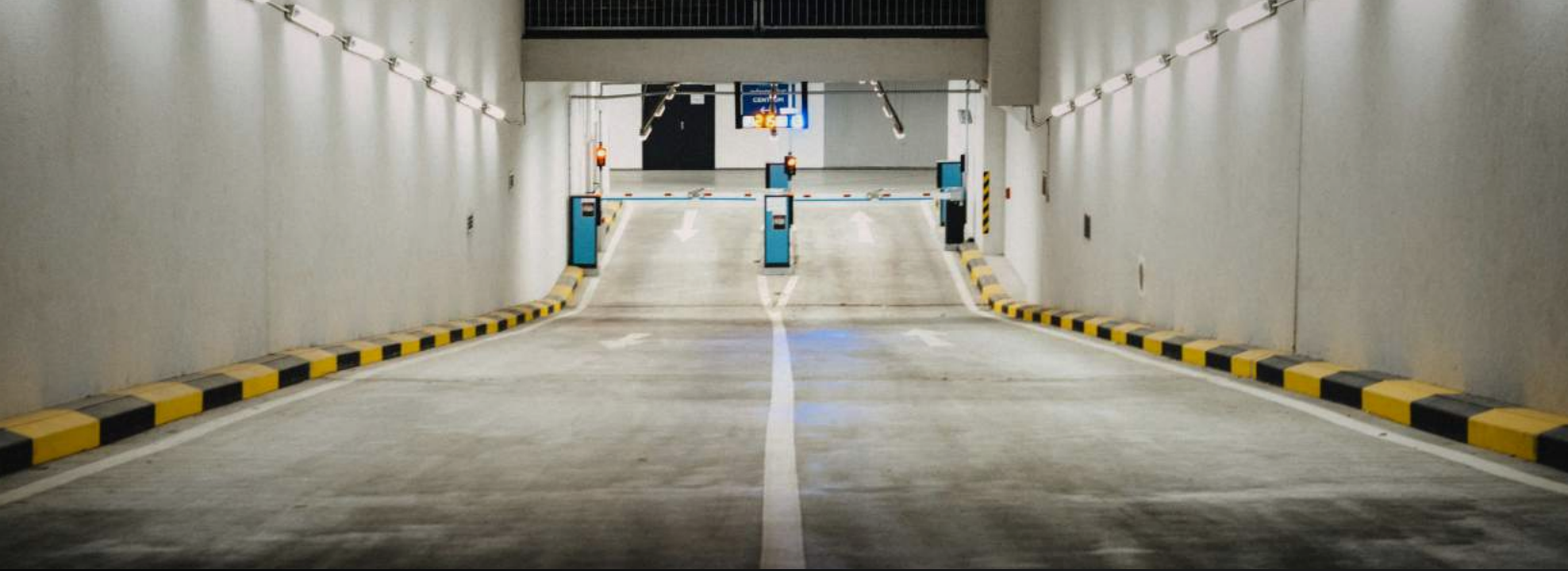
ZeroTier helped Metropolis to rethink how it deploys and supports hardware.

“We were about two years into the project before we really started focusing on the automation piece of it,” said Shipway. “We’ve done so much in six months, automation wise, that we’re now to a zero-touch deployment model.” It has enabled the company to scale up the number of deployments that it can manage – and improve what the business can accomplish.

The IT team is no longer the bottleneck. If the Metropolis sales team can sell it, Shipway’s team can deploy it. At 8:00am there may be nothing, the hardware can be installed at 9:00am, and the parking garage can be collecting revenue at 10:00am.

“My only regret is that I didn’t go down that path earlier,” he said. “Much earlier.”





# Driving the solution

Metropolis is selling its services to parking garages and related industries. But most consumers can relate to the convenience, too – which is another reason to applaud its technology.

Today, when you park your car in a garage, you fumble to press a button for a ticket, and then you worry about losing that slip of paper. When you're ready to leave, you wait in line at a gate, likely for longer than you'd

prefer. Then you wonder if you have enough cash in your wallet, or at least you need to roll down a window in inclement weather.

But if your garage uses Metropolis, when you go back to your car, you leave. After a one-time registration, the payment is made automatically as you exit.

**ZeroTier is helping Metropolis drive that solution.**

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Contact sales at [sales@zerotier.com](mailto:sales@zerotier.com)

ZeroTier is a secure network overlay that allows you to manage all of your network resources as if they were on the same LAN. The software-defined solution can be deployed in minutes from anywhere and empowers your team to create global private networks that connect your devices directly to each other, no matter where they are in the world.

