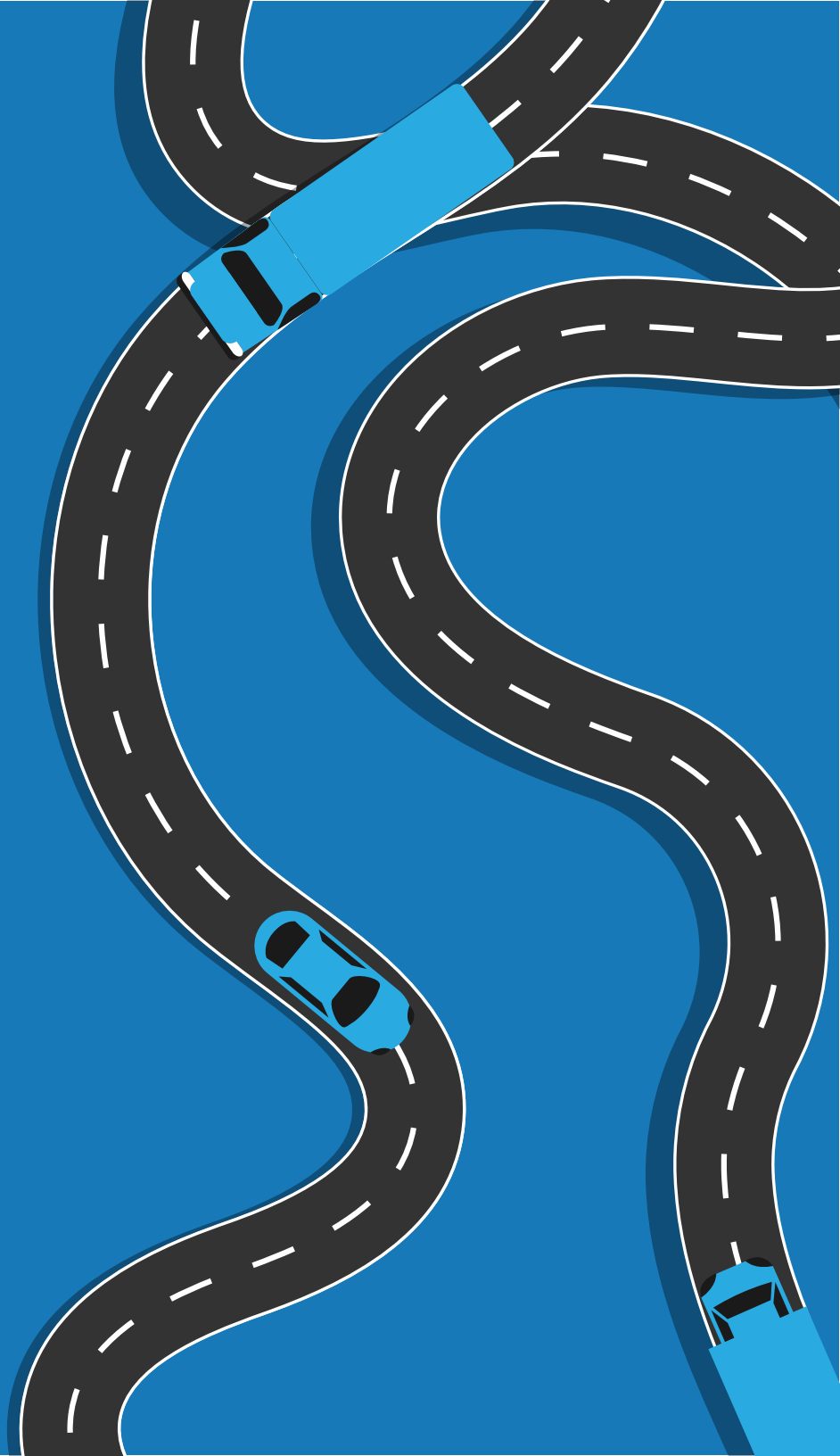
CITRIX®

Supercharge your digital workspace

How Citrix SD-WAN creates a reliable WAN for high-performance app, desktop, and data delivery



Delivering a great user experience is everything

You already know the advantages of secure digital workspaces — secure app, desktop, and data delivery, contextual access, advanced security controls, and predictive analytics for full visibility across users, clouds, data centers, and networks. Making sure your employees have a great user experience, however, will help you get the most out of your investment, encourage adoption, and reach new levels of productivity.

SD-WAN technology makes this possible, whether people are working from a branch office or a remote location far from the data center.

It allows you to:

1. Use all available bandwidth
2. Optimize performance for virtual, web, and SaaS apps like Office 365, plus other bandwidth-intensive apps such as VoIP
3. Ensure always-on connections with the highest possible quality experience

"SD-WAN brought an instant improvement to our user experience ... by bringing in additional bandwidth and bonding it together."

-Amir Rohani
ICT infrastructure manager

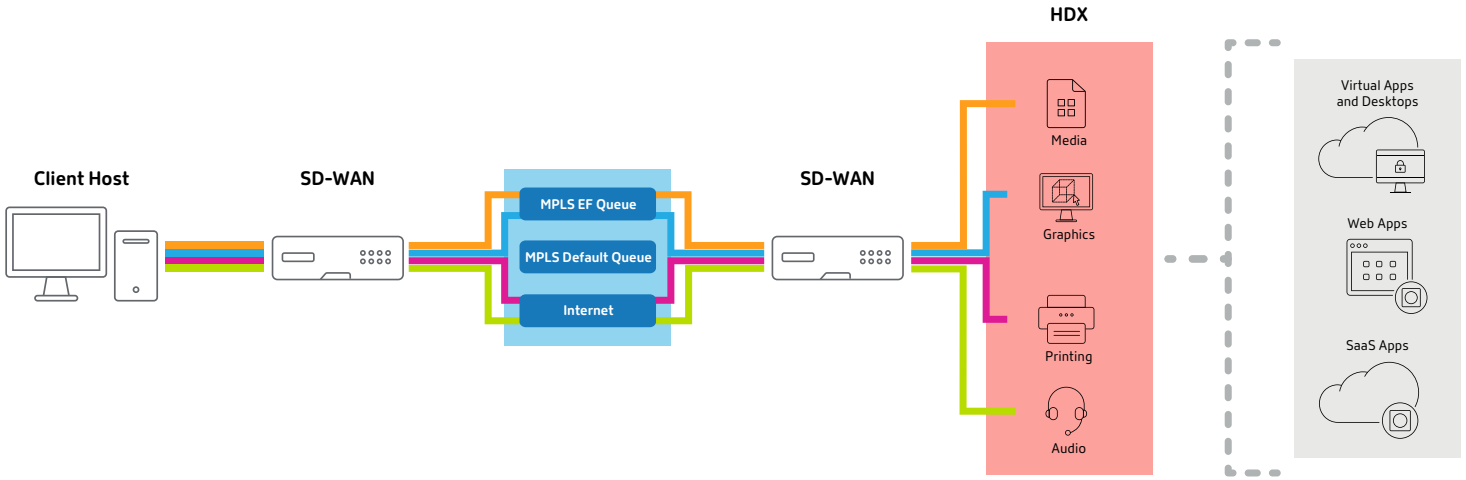
Why traditional WANs can’t keep up

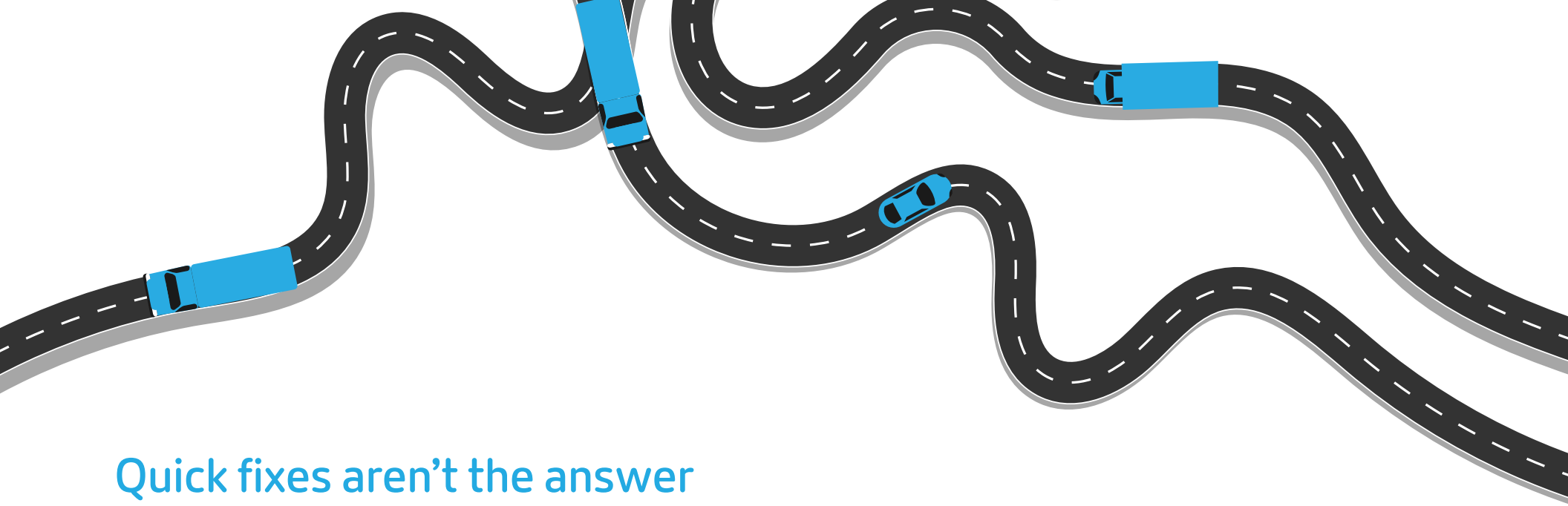
People in remote and branch locations rely on the performance of their digital workspace to be productive. If your WAN can’t keep up with the bandwidth demands of rich media, high-resolution monitors, virtual, web, and SaaS apps, virtual desktops, and file sync, the user experience — and ultimately the business — will suffer. But most often, the problem isn’t your applications — it’s the WAN.

WAN latency and congestion can stretch round-trip time (RTT) hundreds or even thousands of times longer than a corporate LAN. A poor backup response in an outage can be disruptive to users’ work and result in lost revenue. Even a failover to a backup link may not happen quickly enough to prevent a dropped session. Additionally, the lack of traffic prioritization can leave your most critical apps without enough bandwidth.

As more apps are moving to the cloud, distributed organizations are turning to SD-WAN to provide an optimal digital workspace experience, secure branch connections to the cloud, simplify management, and increase agility to address both present and future networking requirements.

Almost 60% of organizations are installing, piloting, or actively researching SD-WAN solutions.[1]





Quick fixes aren't the answer

What you probably already considered	Adding a backup link	Increasing bandwidth	More branch office servers	Generic router QoS optimization
Why it falls short	• An inactive backup link can't ensure fast enough failover to preserve the user's session. • Fails to relieve congestion in situations short of an outage.	• Results in high-cost, slow MPLS upgrades. • Consumer-grade DSL and cable lack predictability. • Without link aggregation, backup bandwidth may go unused.	• Trades bandwidth issues for new burdens. • Added costs around remote management and data replication.	• Lacks the ability to prioritize different types of HDX traffic, leaving the network unable to ensure quality for congestion-sensitive apps.

How to add even more value to your digital workspace deployments

Citrix SD-WAN (formerly NetScaler SD-WAN) helps you realize more value, faster, from your current digital workspace initiatives by creating a virtualized network infrastructure that provides an excellent experience for all users regardless of location or network conditions.

By virtualizing and bonding different types of WAN links, including lower-cost broadband, 4G, and LTE, you no longer are limited to adding costly MPLS to get the bandwidth you need to reliably deliver digital workspaces to branch and remote locations. Video, rich media, voice, and other demanding applications perform just as well for remote and branch users as they do over the corporate LAN. And if your workspace includes Office 365, Citrix SD-WAN can detect and classify its traffic and route it to the nearest O365 front door for the most optimal user experience.

A more reliable network adapts to application demand and provides granular visibility into WAN traffic while optimizing performance where it counts the most. Users gain a great experience for every app, every time, and your business gains the flexibility and mobility to become more productive than ever.

With Citrix SD-WAN, you gain the agility to easily and quickly move apps and data to cloud resources. In addition, Citrix SD-WAN will provide seamless integration and support for the Microsoft Office 365 Connectivity Principles. This complements the Office 365 user experience by directly egressing to the closest Office 365 cloud service when connecting over the internet.

"We're able to utilize commercial-grade broadband services along with 4G/LTE and our Metro-E fiber to facilitate our network reliability, which is key for our organization because, as we're a full Citrix Virtual Desktops environment, we need to make sure we have full uptime."

-Trevor McCain
Network Administrator, The Watershed

Citrix SD-WAN lets you:

1. Increase bandwidth by aggregating all available bandwidth into an active/active connection.
2. Optimize performance and tune network policies with QoS
3. Ensure always-on connections for users with the highest-quality experience — even for rich media and high-definition video.

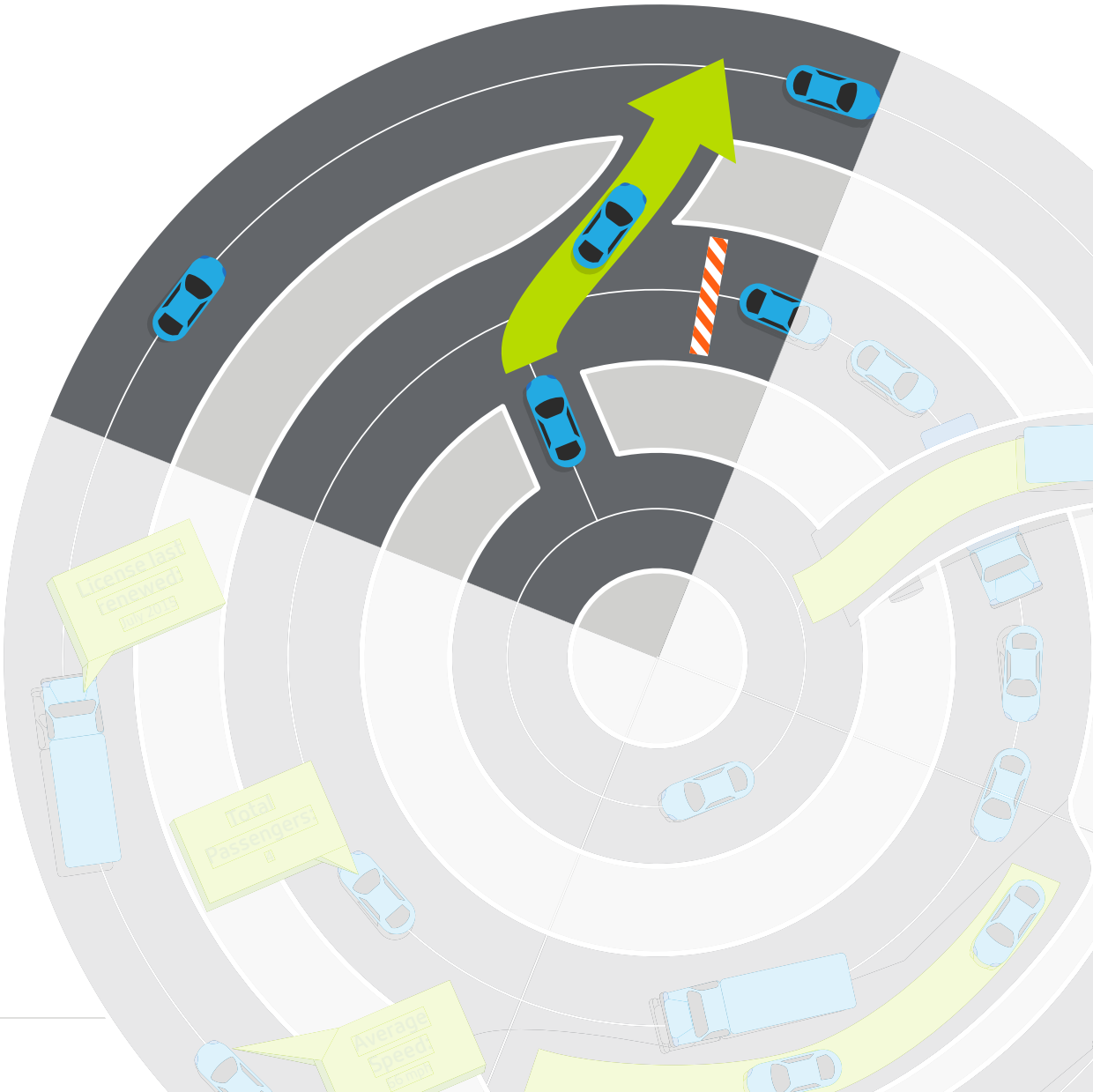
4 benefits Citrix SD-WAN delivers

1. Improved reliability

Whether users access their apps, desktops, and data from a data center or cloud, Citrix SD-WAN makes sure that underlying network issues don't interfere with access or their experience. The solution enables a self-healing network, automatically rerouting traffic off of poor-quality or failed links — and doing it instantly so user sessions don't disconnect.

Citrix SD-WAN uses two or more links to create a virtual connection between the branch and the server. If there is a failure on one of the links, or if one begins to degrade, all traffic immediately will be moved to the remaining link, preserving the user sessions and user productivity.

Citrix SD-WAN can also identify and classify Microsoft Office 365 traffic, and steer it to the nearest O365 front door or edge node. While there are only about 40 Office 365 data centers globally, there are many more front doors which are critical to combating latency and delivering a great user experience.



2. Higher quality

3. More bandwidth

4. Better visibility

4 benefits Citrix SD-WAN delivers

1. Improved reliability

2. Higher quality

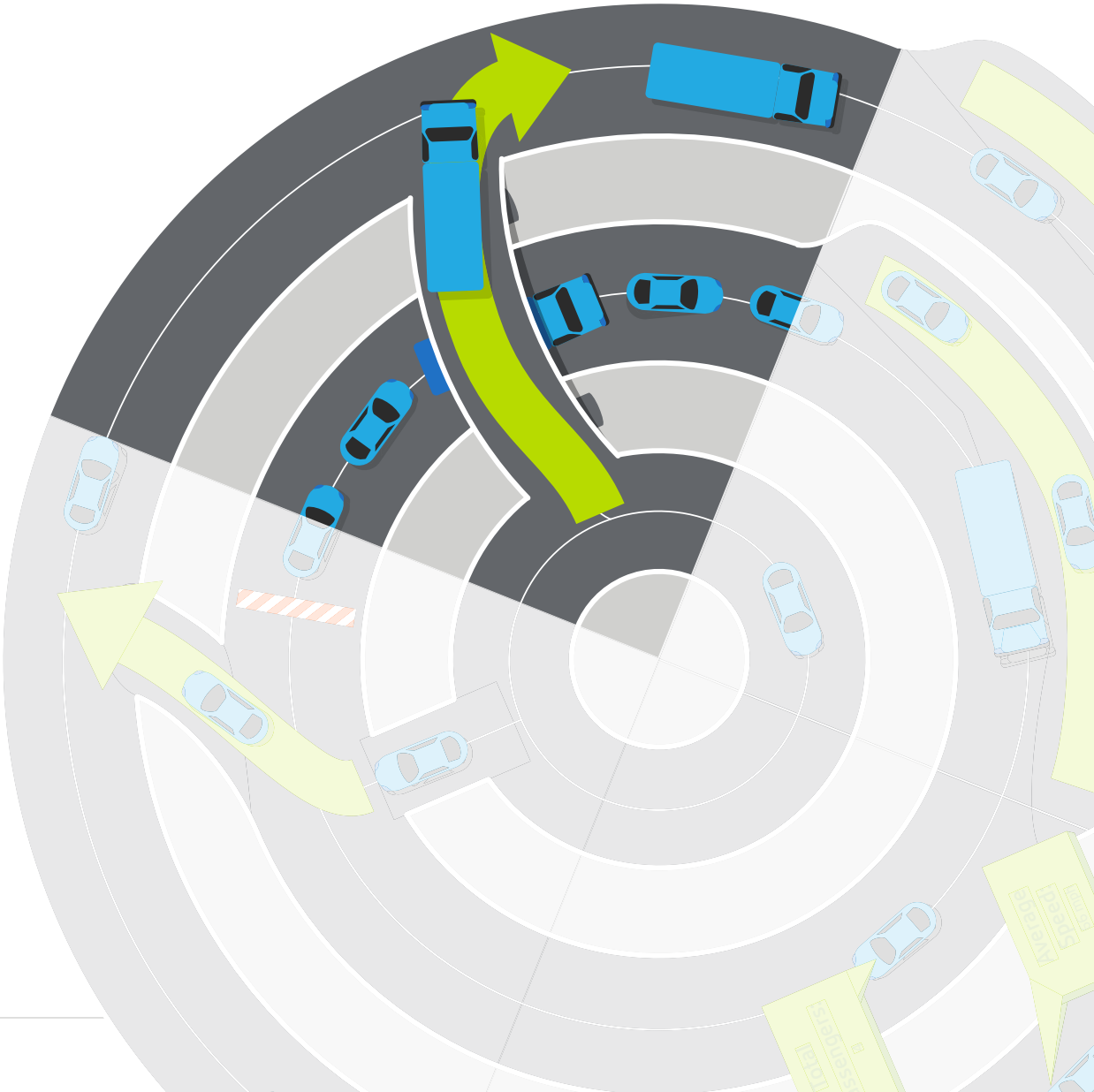
Fine-grained, HDX-aware control over QoS helps you ensure a good experience for every application people use.

Session fairness ensures that no single user affects others on a constrained WAN by making sure that traffic is forwarded evenly from all users. A priority queuing engine reserves a configured percentage of bandwidth for each class of traffic or queue to ensure minimum bandwidth utilization.

Best path selection chooses the ideal network path for each sub-session. Lower-priority sub-sessions, such as printing and file downloads, can be moved to slower links to leave the best-performing links available for more latency-sensitive traffic, such as screen refreshes and mouse movements. Local media caching accelerates performance and video download times by up to 45 times because media is delivered at LAN speeds. At the same time, WAN link usage for redundant transfers is minimized.

3. More bandwidth

4. Better visibility



4 benefits Citrix SD-WAN delivers

1. Improved reliability

2. Higher quality

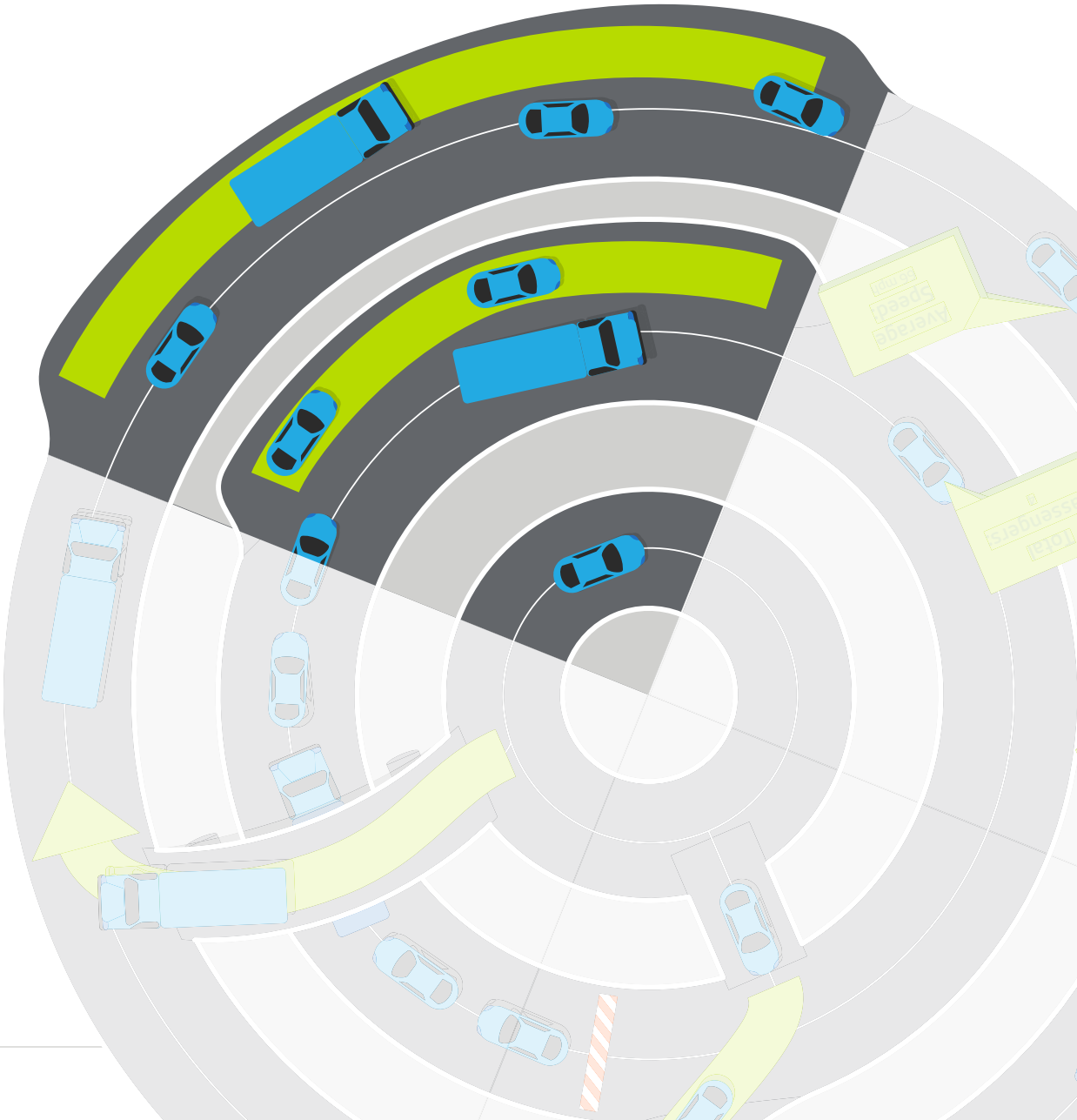
3. More bandwidth

Citrix SD-WAN allows you to augment MPLS with broadband—all logically bonded into a single link—to add bandwidth more quickly, flexibly, and at a lower cost than an MPLS upgrade. Because all bandwidth is active, your current unused backup links become available, immediately increasing available bandwidth and allowing you to support more users, apps, video, other rich media, and more of all the other traffic your business runs on.

With Citrix SD-WAN, the bandwidth you do have is used efficiently. Intelligent bandwidth reservation ensures critical applications have sufficient bandwidth when needed during peak usage times, while allowing other applications to use that bandwidth during other times. And the unique dual-ended QoS feature makes sure that data center links are never oversubscribed.

And for additional bandwidth at the branch, Citrix SD-WAN can make use of wireless links with an understanding of monthly usage limits and varying bandwidth availability. All these work together to ensure that you have abundant bandwidth for critical applications and aren't wasting money on unused capacity.

4. Better visibility



4 benefits Citrix SD-WAN delivers

1. Improved reliability

2. Higher quality

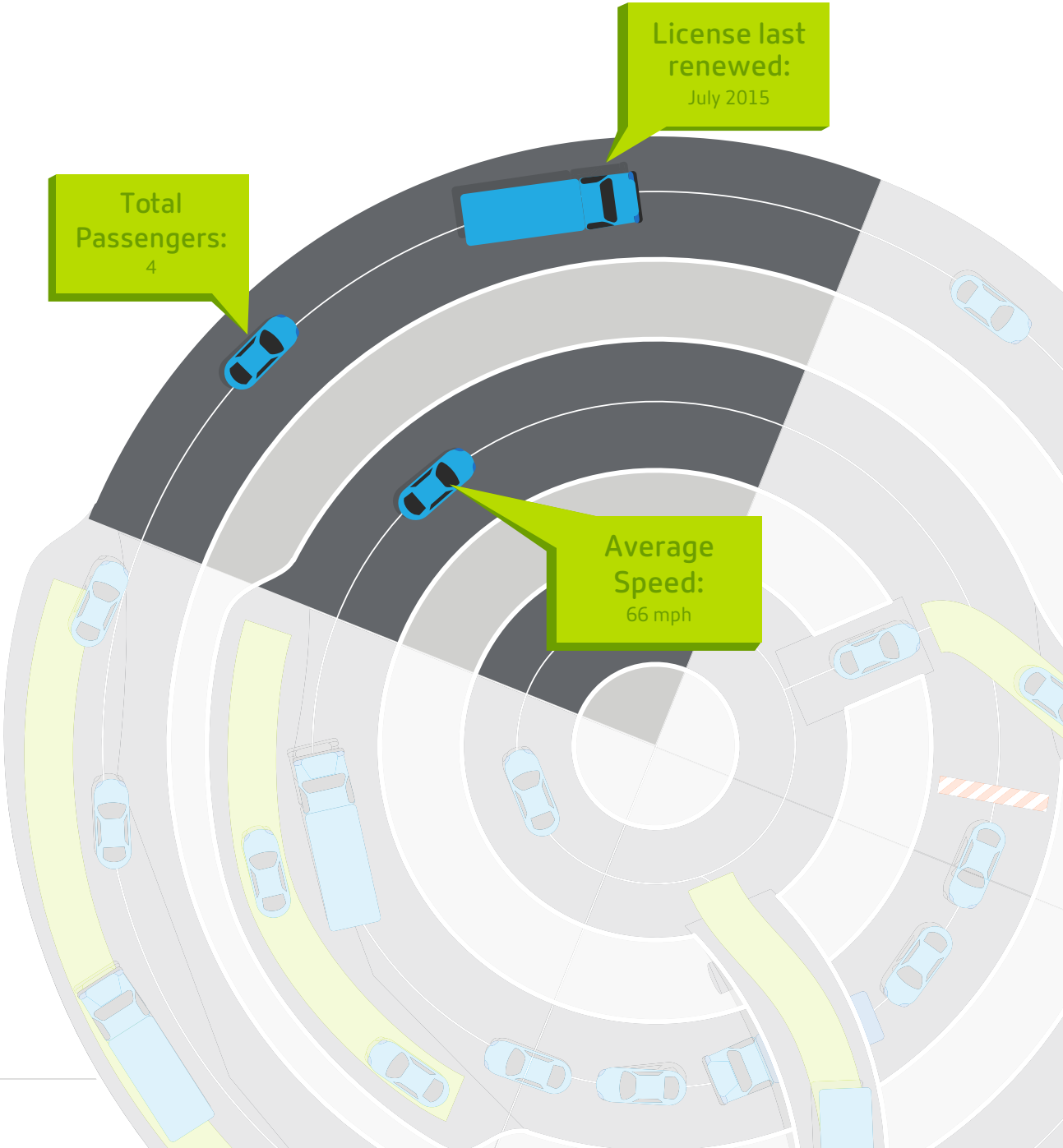
3. More bandwidth

4. Better visibility

Citrix SD-WAN provides deep visibility into the WAN, helping you understand the quality of experience you're delivering, with an easy-to-use platform for troubleshooting and data-driven policy tuning.

See latency in detail, even for individual users, for each step in the application delivery flow. You can view both real-time and historical data for users, sessions, and sites, with drill-down capabilities to discover the source of any ongoing, imminent, or potential future application performance issues.

Knowledge of how current SD-WAN policies are impacting the user experience helps guide further fine-tuning. You can even apply QoS rules to individual flows for specialized handling of each type of data. QoE gives you instant visibility into the QoE parameter for each application based on performance metrics such as latency, jitter, packet loss, and packet drops.



But don't just take our word for it

Rehab Management improves branch productivity and security while lowering costs

Rehab Management provides return-to-work, injury management, ergonomics, and psychological services through a network of offices and field locations across Australia. With only 2M of bandwidth, the company's MPLS-based WAN was unable to deliver video content and virtualized applications. This raised concerns about user productivity and security as well as the prospect of rising IT costs.

Citrix SD-WAN allowed Rehab Management to eliminate its MPLS connections and make more effective use of the broadband already deployed at remote locations. The company now uses Citrix SD-WAN and Citrix Virtual Desktops to replicate its Windows environment to employee devices in remote areas throughout the country, improving the quality of services provided to patients and increasing workforce mobility and security.

Results

- Increased bandwidth 10 times to support Citrix Virtual Desktops and video traffic
- Avoided the $2,000-per-location monthly cost of an MPLS upgrade
- Reduced costs from $500 per month per location to $100 by switching to three asymmetric digital subscriber lines (ADSLs)
- Mitigated the performance risk by bonding three ADSL WAN links

"Tackling the connectivity issue at its core means no office is at a disadvantage, with cost-effective tools that complement our existing IT infrastructure empowering employees to do their job remotely."

-Boris Kotevski
National IT Manager,
Rehab Management

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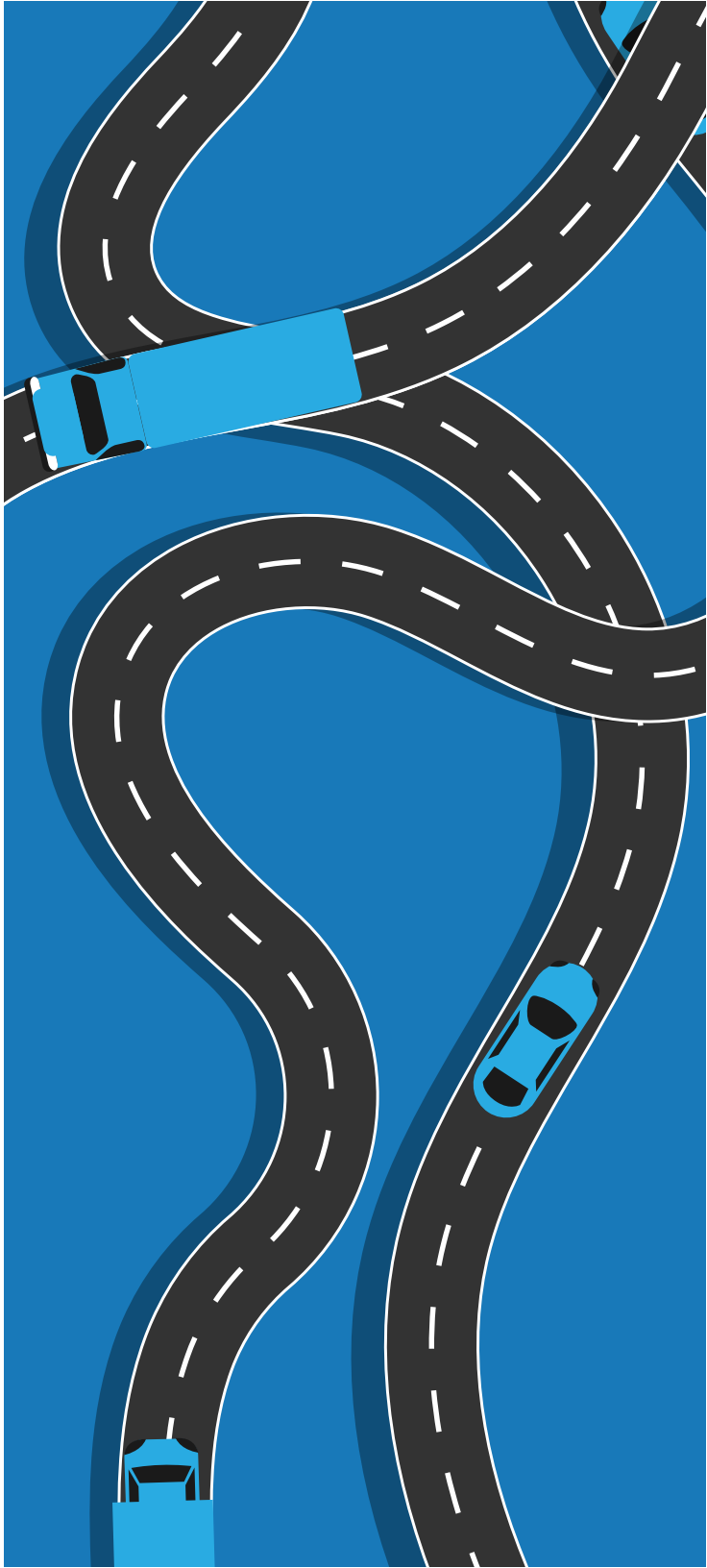
Still not convinced? See for yourself.

Try Citrix SD-WAN for free for 90 days.

Citrix.com/products/citrix-sd-wan



Source:
1. 2018 IDG State of the Network Study