

**TPX** Comics  
Issue #1 - Collector's Edition

# THE NETWORK CHRONICLES



# DATA MAN

SAVING ONE NETWORK AT A TIME

## **NETWORK PROBLEMS.**

*They can strike anywhere and at any time. Their effects can range from the annoying to the downright disastrous. Users fear them; IT departments dread them. They can create chaos, causing downtime, latency, loss of productivity, increased costs, loss of revenue, unhappy users and, worst of all, dissatisfied customers.*

*Many noble men and women battle these network problems every day – increasing bandwidth, implementing new monitoring systems, even hiring more employees. But more often than not, they treat the symptoms without ever truly knowing the root the cause of the problem. That’s where our hero comes into the story...*



# THE BANDWIDTH BLUNDER



All was calm that sunny day in Server City. The morning at Empire Software started off like any other. Steve Easton, the network administrator at the city's biggest company, was enjoying his first cup of coffee when an urgent call came in...



"Steve, can you help? My remote connection is so slow I can't get my online meeting started. I have 100 sales people waiting for me! Please fix it - now!" It was Leslie Higgins, the company's worldwide vice president of sales. "Don't worry Leslie, I am on it," said Steve.



Closing his door, Steve put on his black-rimmed glasses. They didn't look like much, but once on his face, Steve's true self was revealed as he became **DATA MAN**. Covering any WAN, LAN or VLAN with one look of his x-ray vision, Data Man was responsible for keeping Empire Software up and running.



With his IT x-ray vision, Data Man immediately isolated the traffic types that were using the highest percentage of available bandwidth.

He then traced the traffic back to an individual at the remote site that was using their local computer to stream videos off of Netflix.



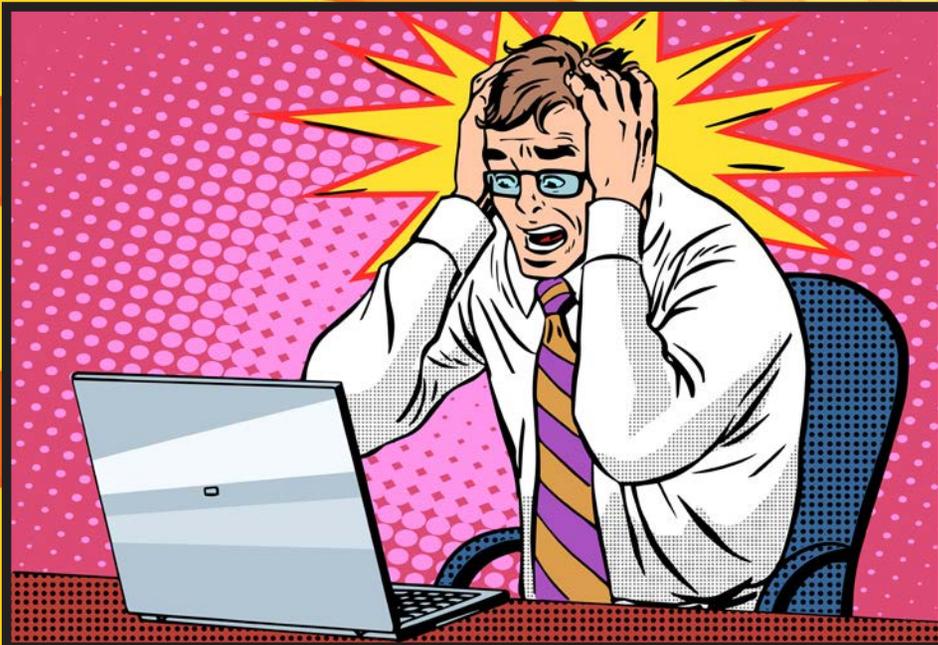
Data Man sprang into action, immediately terminating the Netflix session, which gave Leslie the bandwidth she needed to run her call. To make sure the problem never plagued the company again, Steve put a policy in place limiting video streaming for personal use.

With the first crisis of the day averted, Steve was ready to finish that first cup of coffee.



# THE LATENCY ELIMINATION

When we last saw our superhero, he was finally settling into his morning routine, chatting with colleagues about their weekends and the upcoming big game. But when his phone rang, he could sense it was time to get back to work.



“Steve, we need your help right away!” said a distraught man. It was Mark Wilkins, regional director at the company’s office in Portville. “Our remote network is completely non-functional for all Internet, server and web application usage. It’s taking people 10-15 minutes just to login – if they can even get that far. Productivity has ground to a halt. Can you help?”

With 35 different remote sites, Empire Software recently placed all of its desktops and laptops on the domain to improve security and simplify management. Putting on his x-ray vision glasses, Steve got to work.





Data Man identified a trend of large data spikes in recurring intervals moving out the LAN uplink – and correlating with large data spikes moving to IP addresses tied to computer systems at the remote site. Using this information, Data Man identified that the source of the traffic was the two domain controllers. Using his understanding of Microsoft systems, he identified that there was a system folder replicating out to domain members. Generally this folder is very small. But further review of this folder on both domain controllers revealed that a large file had been improperly saved in that system folder. This file was replicated out to individual desktops across the VPN throughout the day, saturating the network connection at the remote site and killing the site's bandwidth. He quickly removed the large file and the network latency issues were resolved.



Steve sat back in his chair, taking a deep breath after what had been a busy morning. It was time for a second cup of coffee.



# THE CONNECTIVITY CONUNDRUM



It has been three hours since the latency issue. Hopefully the rest of the day would be just as quiet. He should have known better as a call came in from another remote site.

It was Jacqueline Carter, the company's CFO. "Our users are losing connectivity to our internal mail server. Can you please help us?"



**STEVE, WE NEED YOUR HELP!**



With his x-ray vision, Data Man quickly found the issue. The path between the remote site and the main site did not indicate the available bandwidth promised by the service provider. Upon further review, the service provider had a duplex mismatch between the LAN port of their router and the uplink port on the organization's switch. Data Man contacted the service provider and worked with them to ensure that the port was statically set to full duplex on their router.



All was well once again at Empire Software. "Thank goodness for x-ray vision. I don't know how our business would survive without it," thought Data Man, as he swigged down his last sip of coffee.

## Get the Power You Need to Be Your Organization's Superhero

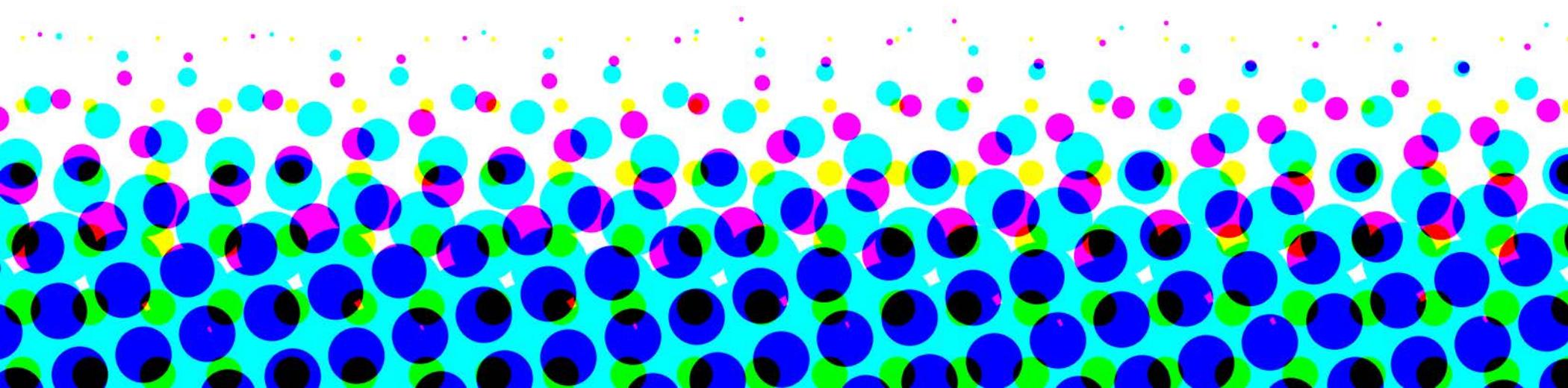
Okay, so no one can really give you a super power or cool x-ray glasses. But a managed network services provider can give you the tools and visibility you need to get the real-time performance data from your network to quickly identify and resolve issues – and even prevent them from happening at all.

### *Why does the network matter?*

A healthy network is absolutely vital to running a successful business. Your network is the foundation, the very backbone of your company's operations. When it's broken or fractured, the pain reverberates across systems, applications, users and even your customers.

But with the Internet of things, the growing adoption of Software-as a-Service (SaaS) solutions, and the rapid proliferation of mobile devices, networks are becoming increasingly complex. Many services and features are no longer internal to your network or under your control, for example Microsoft Office 365 or your Salesforce logic. User expectations are also changing; they require access to information and services from any location, any time and through a variety of personal and business devices.

With all of these moving parts, isolating the root cause of an issue is challenging if not impossible: Is the issue with the local network or a problem on the service provider's end? Is it a bandwidth problem or policy issue? Is it as simple as reconfiguring a port or fixing a cable? Is the issue with the end user or their device? Or maybe the problem is with an out-of-date network card or oversubscribed wireless access points. Nailing down a cause can feel like trying to find a needle in a haystack – impossible.

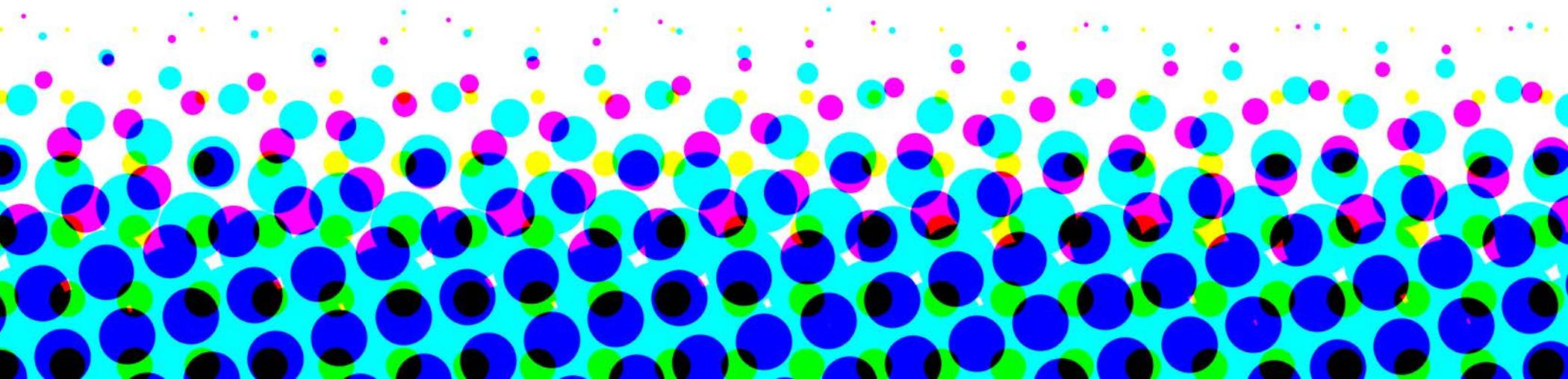


### *Getting to the root cause of the issue*

There are a number of options organizations use to try to identify the cause of network problems. You can run a random PING test from the desktops, but this method yields very little information. Another option is to monitor your switches and routers. But doing so is completely reactive; you are essentially waiting for an issue to impact your organization so you can take action. Some organizations use a Security Information and Event Management System (SIEM) to record issue and system events as they occur. This method does yield more useful information for diagnosing a problem. But it doesn't give you the ability to proactively prevent problems from occurring in the first place.

The most effective approach to network management for today's complex infrastructure gives you the ability to:

- 1. Understand your application ecosystem.** Your network is incredibly diverse, with applications running internally on desktops, via third-party services and as SaaS solutions. You need a holistic understanding of everything that may impact the network and the user experience.
- 2. Proactively monitor your network.** Network downtime could very easily become downtime for the entire business. And that can lead to decreased productivity, loss of revenue and dissatisfied customers. You need the ability to monitor application performance, bandwidth quality, and path changes across any ISP carrier or LAN before a potential issue affects users.
- 3. Troubleshoot data.** When an issue does become a problem, you need to know about it immediately through pre-configured and customized alerting. To get to the root cause requires historical performance data, deep, hop-by-hop visibility into carrier/provider routes and equipment, and diagnostics to help quickly pinpoint dozens of common performance impairments.



## TPx Managed Network Services: ITx-ray vision for your network

TPx's proactive service approach, proven expertise, and unique management tools give us the ability to monitor your critical network elements 24x7 -- giving you total visibility to quickly identify and resolve issues and prevent new problems from cropping up.

With our **ITx for LAN** managed services, we can monitor all qualified LAN/WAN/ISP paths, regularly reporting on network health statistics such as jitter packet loss, packet re-ordering, propagation, delay, RTT, MTU, MOS scores, QoS changes and more. With automatic alerts, you will know right away if critical endpoints are going down or if thresholds are being exceeded. Just as important, we can help you quickly track down the root cause of those performance issues so you can take quick action. To reduce the burden on your own resources, TPx can act on your behalf, escalating issues to other vendors as needed, and tracking the service ticket to completion.

ITx for LAN is comprised of two key components: **network path monitoring** and **application traffic monitoring**.

The network path monitoring component of ITx for LAN provides end-to-end root cause analysis and SLA tracking on any network. With access to diagnostics, TPx can identify at which hop issues originate and the likely cause. Maintaining service levels is critical. With ITx for LAN, we can monitor any network without impacting production, including hosted services, IaaS, PaaS and Web applications. Because ITx for LAN is built into the core of the IP stack, you can see everything when you ping a target. With an application ecosystem that spans internal and external networks and endpoints, TPx gives you the ability to pinpoint locations and cause of more than 80 network faults, even if they are occurring on devices you don't own or control.

Understanding the "who", "what" and "where" are important when it comes to bandwidth. With application-aware traffic analysis, you can identify which applications are using your bandwidth and visualize traffic volume and rates across offices, apps, app classes and categories.

With auto discovery capability, ITx for LAN can help you identify usage patterns, app performance and impact to over 1,500 SaaS and non-SaaS applications. With integration to Active Directory and DHCP, we identify the hosts and the users running apps.

To manage potential issues before they impact users, TPx lets you know when bandwidth is approaching full utilization so you can take action before problems arise. And as an added measure of proactive management, we can run stress tests on your behalf – outside of business hours – to get ahead of any potential issues.

## The Benefits of ITx for LAN

### *Ensure consistent quality of service with less downtime*

With our managed network service working to both identify and prevent performance issues, your company will experience fewer interruptions due to IT issues and be able to resolve any problems quickly with visibility into the root cause.

### *Prevent performance issues before they happen*

Management by crises may be inevitable, but it shouldn't become the norm. With our managed network service, you can identify and fix problems before they ever disrupt employees, management and/or clients. And by heading off problems before they occur, you will save your team both time and money while reducing potential productivity and revenue losses associated with the downtime or latency of critical systems.

### *Reduce and control costs*

The downtime due to technology problems or performance issues can prove far more costly in the end than the repair and maintenance itself. If your employees can't do their jobs, or your customers can't reach you, the consequences can be disastrous to employee productivity, customer satisfaction levels and the company's bottom line. With our managed network service you can better control your costs while at the same time avoid expensive downtime.

### *Focus on what you do best*

Every IT organization is under increasing pressure to do more with less. Managing crises related to your network drains your team of the time and effort it should be using to support core business objectives. With our managed network service, we act as an extension of your team, letting you know when there is a problem, why the problem exists, and we can help you resolve the issue quickly – freeing your team up to do what it does best.



## Let Us Be Your Trusty Sidekick

Every superhero needs a sidekick; we want to be yours. TPx's managed network service team has more than 20 years of experience managing network services. And in that time we have solved a myriad of issues for organizations like yours. With ITx for LAN, TPx's team of certified network engineers is at your service with proven processes and tools that will keep your network strong. To learn more, contact TPx to schedule a free consultation.



Connect with TPx

800-399-4925

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