VIAVI

The New Age of
Network Observability

End-User
Experience Scoring

**THE KEY TO SPENDING LESS TIME HUNTING FOR THE SOURCE OF
NETWORK PERFORMANCE PROBLEMS AND MORE TIME FIXING THEM**

CONTENTS

VIAVI

INTRODUCTION

Today you're mired in agile scrums and projects on top of the daily expectation to manage and monitor network performance and now everyone is chattering away about the end-user experience. What's the real value of understanding end-user experience? By looking at network performance from the outside-in vs. the status quo of inside-out, the success of your efforts and the projects you work on could dramatically improve.

Example: You are handed a trouble ticket but you're spending way too much time looking at a variety of data and KPIs in hopes of finding the real cause of network problems that impact users and the business. Before you can resolve this ticket, you're handed several more and the exercise starts all over. The issues take too long to resolve or are never resolved. Or, because the issue was intermittent, you simply aren't able to solve it in the time you have. Ideally, you'd rather prevent issues or at least get them resolved to everyone's satisfaction much more quickly. And, the time you are spending troubleshooting from the inside-out (based on tools or technologies or status quo processes) is time you've lost forever. It's gone and you can't buy it back. You may think there aren't any other choices. But thankfully, there is a new, better way!

Let's explore how we can help make things right, by turning everything on its head and starting with the end-user instead of the infrastructure.
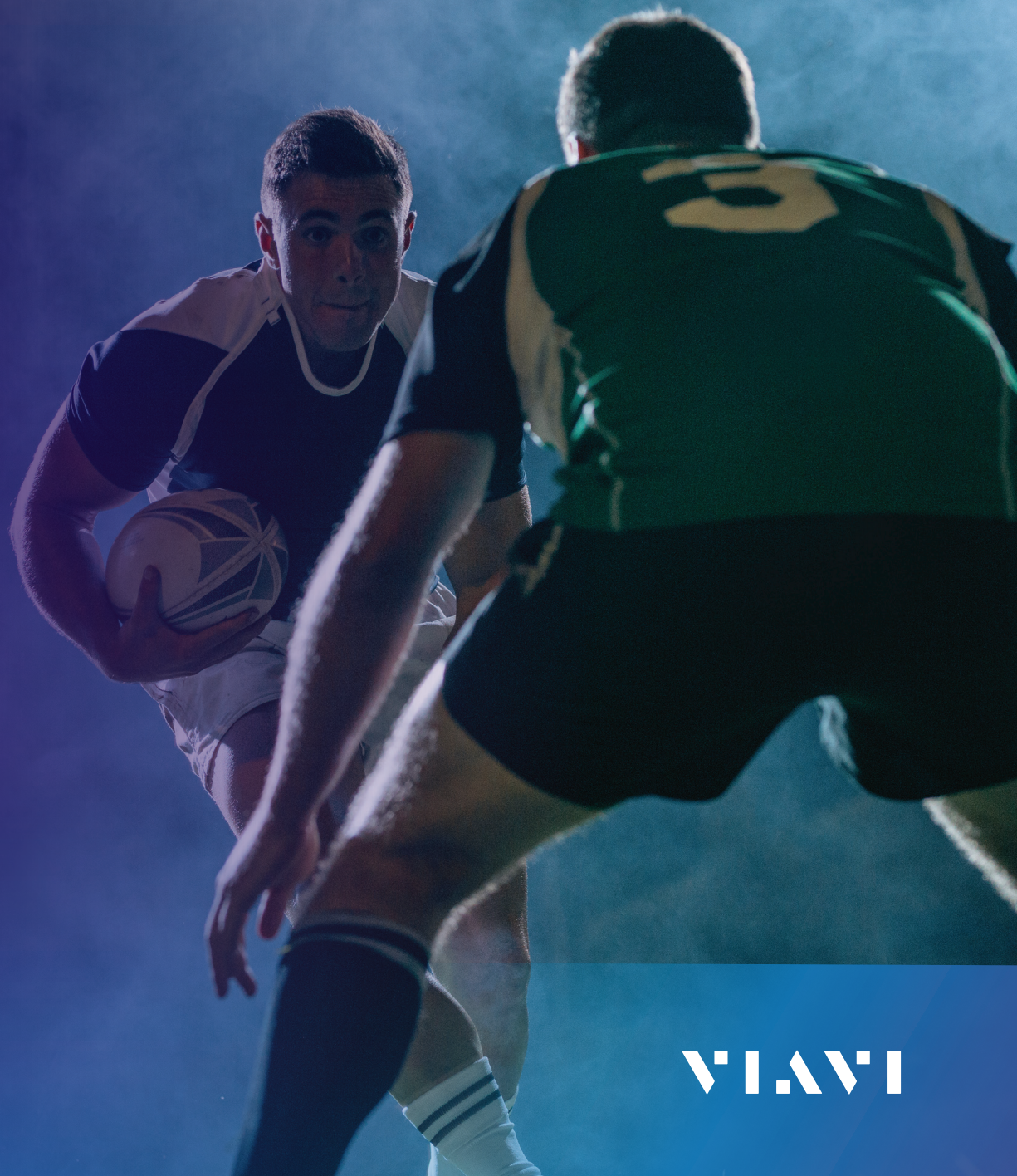
VIAVI

OLD WORLD PROBLEMS

Each team or individual has a go-to set of tools and metrics they use when a problem occurs. But how often do these tools help with efficient problem validation, isolation and resolution?

From the end user perspective, let's consider the impact of delayed performance and problem resolution. Nearly 40% of users say a technology problem disrupts them in their daily work[1]. They don't care about the complexity and architecture of the network nor should they have to. The reality of enabling work anywhere amplified the expectations—and the problems. And the problems affect users and IT albeit in different ways.

So, let's imagine a different approach that begins with the end-users' experience, not the infrastructure or applications. What if IT had a single metric, a single score to help see where the issues are, a score based on the user perspective? What if you could see at-a-glance how poor the performance really is: starting to cross over from good to degraded or gone from great to completely unavailable? Picture being able to see how widespread the issue is and compare scores across sites. Would this insight transform your troubleshooting efforts?

1. Forrester's 2020 Analytics Business Technographics® Workforce Survey

VIAVI

What are the most critical aspects of EUE Monitoring for your IT organization?
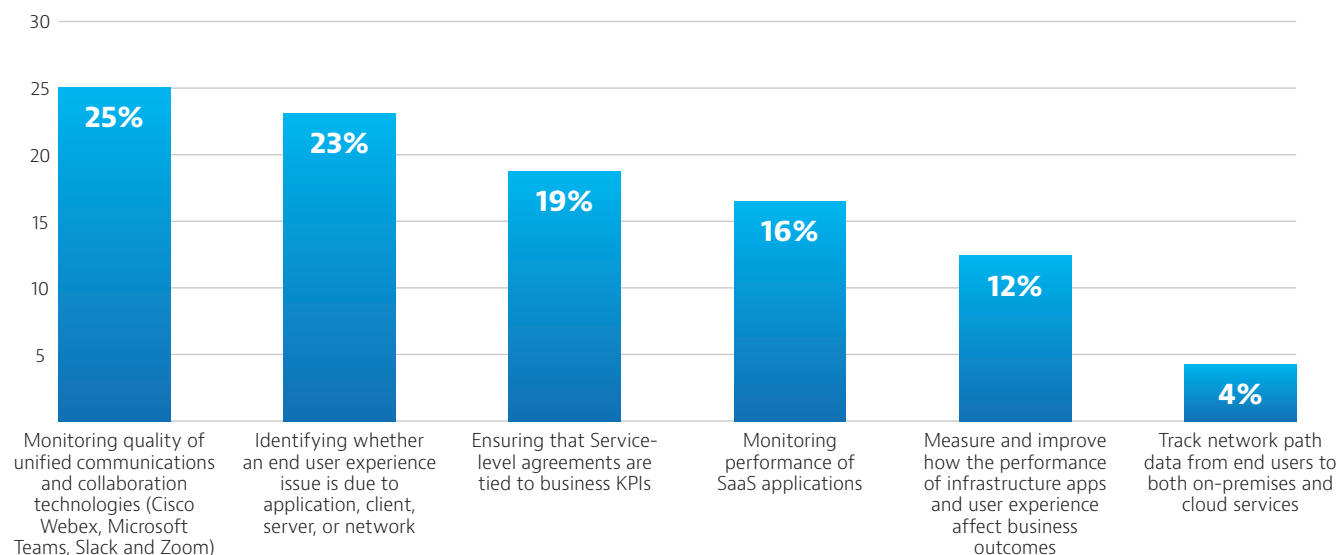

The 14th annual State of the Network survey highlighted that understanding end-user experience is a high priority area that will help give you better insight and visibility. The events of 2020 greatly emphasized this need. Almost overnight many of your users moved from an environment where you had at least some visibility and could get a sense for how things were performing, to one where a whole new set of variables was introduced. Variables that in many cases were beyond our control and left us without any direct visibility into what was happening out there in our users' homes. Highly skilled network engineers were under pressure to figure out new ways to understand and resolve application performance problems in this 'new normal'. And so, it became and, in many cases remains, the number one challenge.

The issue is that the tools, techniques, and processes that engineers relied upon (and probably help build in the first place), were never designed for this strange, accelerated, all digital world. But this was only one of several shifts which exacerbated the problem: bring your own device, the move from on-premises applications to public cloud and hybrid architectures, SD-WAN deployments and more, left their mark. Each of these seemingly small changes altered network traffic patterns and challenge the ability to effectively troubleshoot network and/or application performance issues.

VIAVI
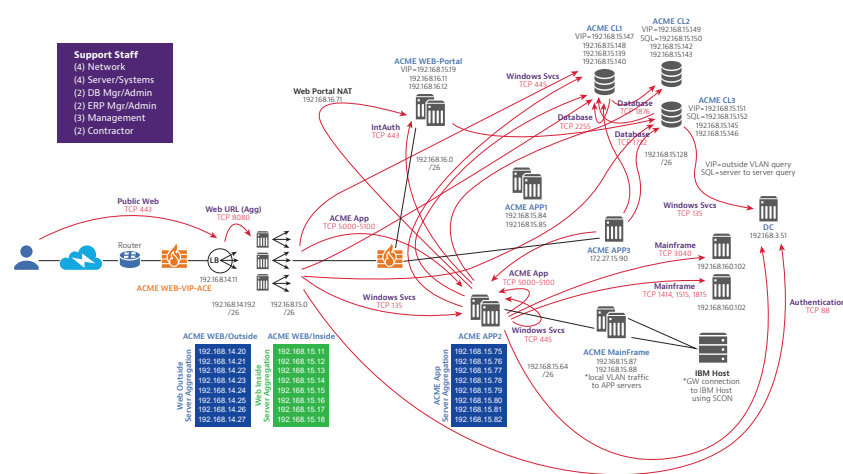
THE CHALLENGE

As documented consistently in the annual State of the Network study, a top challenge is trying to identify problem domain for issues—especially those pesky, intermittent issues that users grow frustrated and impatient over. Why? Because, as we've noted, the status quo for troubleshooting begins inside the infrastructure and across the applications. Using this process, engineers can quickly be overwhelmed sifting through a sea of data and performance metrics to try and deduce what users experienced and where the problem could reside. It can be even more confusing when all indicators are green, but the user experience problems persist. According to Forrester Research, one-third of user complaints linger without resolution for a month or are never resolved at all.

Ratholes. Rabbit holes. Cul-de-sacs. Call them what you like, but we've all been dragged down them when trying to work out exactly what the root cause of a problem might be. Chances are you've been pulled into a war room situation because there is a business-impacting issue and the application team is blaming the server team, the server team is blaming the cloud provider and they are blaming your network. A large amount of time is wasted trying to figure out what is really going on. In the meantime, employees, revenues, customers, and/or business critical operations are severely impacted by the slowdown or downtime, costing money and tarnishing hard-won reputation.

Remember that oft quoted definition of insanity: Insanity is doing the same thing over and over and expecting different results.

It's time to stop the madness by changing and doing something differently. Solutions that can automate identifying problem domain in troubleshooting can help get things back on track quickly, with minimal impact to the business. A better approach is available and it's one that our customers helped us to develop, test and prove.

VIAVI

INTRODUCING NEW AGE SOLUTIONS:
START FROM THE END (USER) NOT THE INFRASTRUCTURE

The new age way to resolve issues is now available using the patented End-User-Experience (EUE) Score. What is End-User Experience scoring?

To clarify, it isn't just another product feature or a box we checked before we moved on to develop the next feature. Understanding and improving the end-user experience is what we do. We help you clearly see when you have an issue and understand the severity, scope and duration. In a nutshell, we help you to get to root cause.

Let's examine how you troubleshoot issues today. When an end-user, wherever they may be, accesses an application, finds performance is problematic and calls for help, where do you start? What questions do you have to answer as you begin the triage process? How many devices and user interfaces do you need to touch to get those answers? How many colleagues or service providers will you need to get involved? Troubleshooting multi-tier, multi-cloud and multi-vendor application architectures can be a nightmare — a challenge that can drive even the most talented network sleuth to question his/her sanity. While it can be immensely satisfying to track down the problem and resolve it, the complex environments you are overseeing can make it massively time consuming. Identifying which piece of the infrastructure or network is involved, who owns it, and what tools are available to drill down to find information needed can be tough. If it's an application issue, which tier of the application should you focus on and is it a problem with one server or multiple servers? Then there are questions about sifting through packets (which ports should be filtered on) and so on. But wait, what if the problem is with the end-user device…

Three Unexpected Benefits of End-User Experience Scoring from VIAVI

1. You'll empower Tier 1 engineers to quickly validate user complaints, identify the problem domain fast, and route to appropriate experts without lengthy consultations. At this time of the skills shortage crisis you can better utilize the expertise (and enthusiasm) of the Tier 3 engineers for complex problem troubleshooting and proactive network optimizations.

2. Capacity problems can be seen and rectified before *that* call from the CEO

3. A lowered EUE score can be the first warning that you are suffering from a hack or breach in the network because it affects how the network is performing.

VIAVI

Some vendors attempt to help by providing a metric that tries to answer any question that you might possibly have. It isn't that there is no value in single metrics or KPIs, but these single measurements aren't actionable. How do you know what to do with individual metrics? How do you know if they are good or bad? Clearly, context is king here, but just having piles of raw data aren't helpful. More data isn't going to solve the problem. What you need is some way to transform that data into answers. That is what the EUE scoring from VIAVI provides.

Benefit from real-time insight into how your users experience applications and services. You get a single, color-coded score between 0 and 10. But that's not all, you also get an easy-to-understand root cause domain breakout (Network, Server, Client, Application) for fast troubleshooting and routing to the right team, straight away.

The VIAVI Observer solution replaces hundreds of independent, and mostly unrelated, key performance indicators (KPIs) with a single End-User Experience Score - eliminating guesswork and troubleshooting dead ends. This patented technology empowers engineers to validate and solve user experience issues with a single digit. It answers user experience questions clearly and concisely, providing all levels of the organization with the confidence that comes with comprehensive IT service operational awareness.

End-User Experience Scores satisfy multiple IT needs from network operations and architects to developers, NOC engineers, and executives by answering critical questions related to business and IT initiatives like these:

- Are customers satisfied with their experience?
- How has the new datacenter impacted customer and user experience?

- Did the new cloud deployment strategy achieve objectives?
- Were the application bug fixes effective?
- Are we ready to support security operations teams with remediation and response insight in the case of a breach?
- Is everything functioning as expected?

Using this single, color-coded score providing in-depth domain breakout, a simple problem explanation, and performance visualizations, engineers can quickly determine:

- How are users being impacted?
- How widespread and/or severe is the issue?
- What's next for triage and resolution?
- What is the root cause?

EUE Scoring provides three things:

1. Simple numeric score that tells you when there is a problem and how severe it is

2. Automated domain isolation — is it a network, application, server, client issue or some combination

3. The evidence that supports the conclusion — simple actionable explanations of what has been observed

VIAVI

SOUND TOO GOOD TO BE TRUE? HERE'S HOW EUE SCORING WORKS

If all of this sounds too good to be true, let's go a little deeper to see how this score is calculated and how the domain isolation is determined.

The single numeric score reflecting severity of user impact, is derived from algorithmic analysis of 30 key performance indicators from every conversation. In addition, looking at layer 4 to determine how the transport protocols are behaving helps to provide automated problem domain isolation. Observer Apex automatically analyzes delays between all packets involved in a network conversation, in real-time. As each is captured and analyzed, the tool analyzes possible causes for the delay, the extent to which the delay impacted the end-user, and records the information. At the end of the conversation, Apex identifies the root cause of any detected performance degradation. The conversation is scored based on the IP pair and application, presenting the results as a single End-User Experience Score.
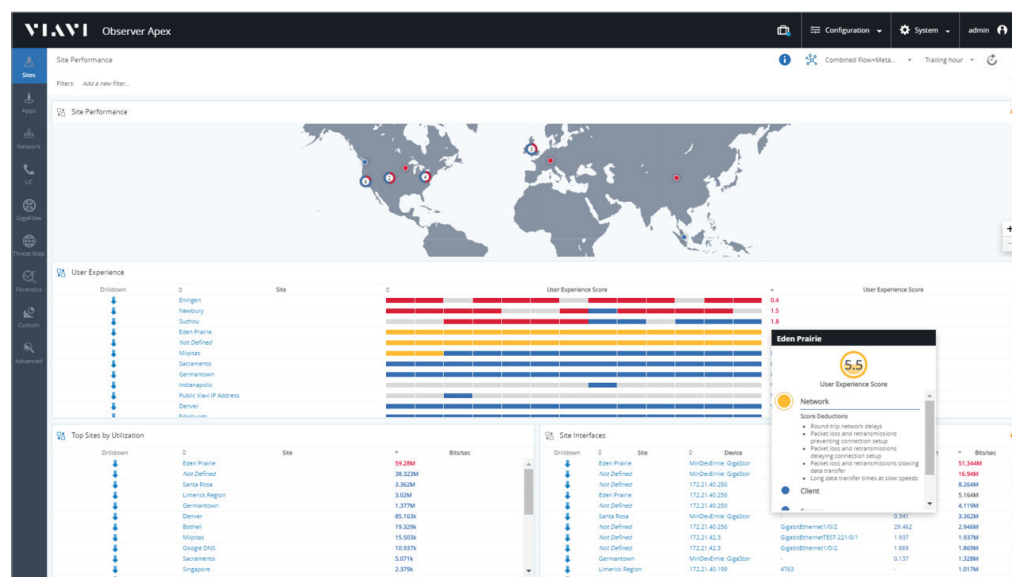

End-User Experience Scores are only as accurate as the underlying data on which they are calculated. In other words, every piece of data matters! Every missed detail has real-world implications on the ability to troubleshoot service issues.

Observer assures accurate visibility on every network conversation by capturing data from all the available sources — a fact that is validated by third-party analysts.
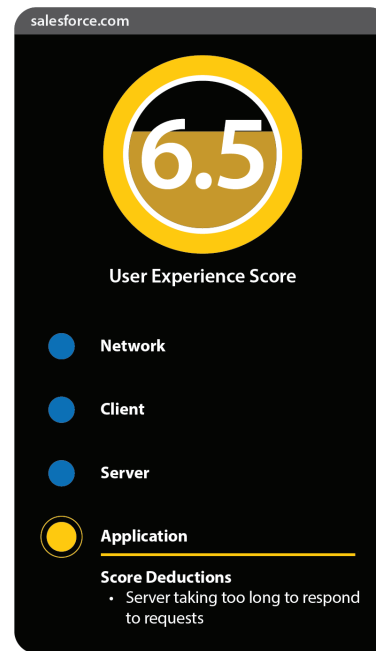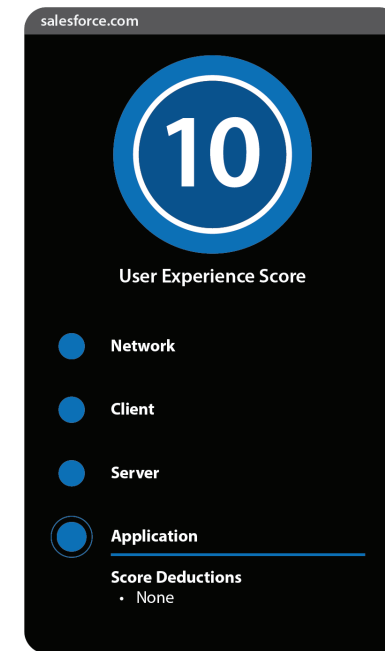
VIAVI

WHAT DOES AN EUE SCORE LOOK LIKE?

Scores range from 0 to 10 and use color coding for at-a-glance validation. Anomalies become clear, false positives disappear, and the noise that frequently masks problems is eliminated:
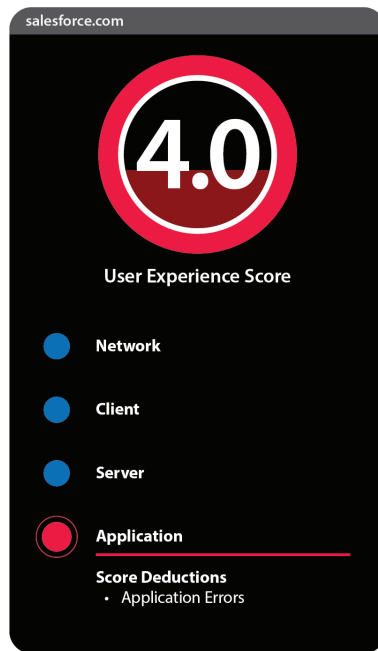
Red (0-5) = Critical

Yellow (5.1-7.9) = Marginal

Blue (8-10) = Good

Scores can provide visibility into a single user's experience or groups of users defined by site, geolocation, etc. as needed.

IT teams can save hours troubleshooting by "following the yellow scores" to act early and prevent serious network degradation by drilling up, down, and laterally via site performance dashboards or three-clicks-to-resolution workflows. No more chasing false positive KPIs or data that leads back to that proverbial rabbit hole.

4 WAYS TO USE END USER EXPERIENCE SCORING TODAY

1. **Gain Actionable Insight into End-User Satisfaction:** Knowing whether users of IT are happy with service delivery is the ultimate arbiter of customer fulfilment. Until recently this was difficult for IT teams to assess without deploying complex and costly agents on each user device. Too much time has been spent chasing red performance indicators without truly understanding if they are impacting business or end users. Observer solves this dilemma with multi-dimensional End-User Experience Scoring using wire data.

   VIAVI End-User Experience Scoring eliminates the guesswork and manual sleuthing from performance monitoring, automating the process by scoring every transaction and isolating problems to the network, application, server or client domain.

2. **IT Operational Clarity, Not KPI Clutter:** IT teams need comprehensive visibility into service health and answers to troubleshooting problems, not endless lists of KPIs. Data without direction is meaningless, that's why VIAVI Observer now offers multi-dimensional End-User Experiencing Scoring. Designed to eliminate the headache of understanding which users are impacted and why, it does the heavy lifting by performing advanced analytics of numerous operational variables.

   Calculated in real-time and retained over extended periods, End-User Experience Scoring reports on every single transaction in an easy-to-visualize numeric value red (critical), yellow (warning), and blue (good) color grading schema from zero to ten. Each score is then further broken out by associated domain: server, application, client, and network-application.

   Available at the individual user level, scores are also intelligently rolled-up so IT teams can quickly assess if the problem is global or localized, affecting one site or multiple sites, one application or every application and impacting one user or multiple users.

3. **Increased IT Team Results and Satisfaction:** With IT teams stretched to the limits doing monitoring, troubleshooting, and helping to drive needed digital transformation projects, finding a solution that allows them to quickly 'see' what needs attention, triage it once vs. many times, reduce war room scenarios and really solve user issues should be a priority now that there is a better way. IT staff development and satisfaction can be enhanced when they are working on projects and initiatives that advance the company success and their careers.

4. **Optimized Digital Experience for the Full Picture:** With use of cloud hosted and SaaS applications on the rise, resolving application performance issues has become much more difficult. EUE isn't a one-off feature that VIAVI developed to check a box. EUE scoring is continuing to evolve including adapting the algorithms so they can also be applied to synthetic/active test and observed end-user transactions. This evolution eliminates the blindspots around SaaS applications giving insights into cloud services like Salesforce, Dropbox, or Microsoft 365. The nirvana of continuous service delivery, optimized for the end-user regardless of the location of either, is within reach.

IT'S TIME TO CHANGE

It's okay to be skeptical but there is data and math behind the VIAVI EUE score.

After working with hundreds of customers using a lot of data from a variety of environments, including our own, we understand what metrics matter most. And we also know how valuable your time is and want to help you use it wisely and productively. Other vendors may claim to offer an EUE score, but when you start digging, you quickly see it's a round trip latency measurement — great to have but on its own, that single measurement is out of context and can't provide an accurate, quantified understanding of end-user experience or problem domain isolation. It isn't actionable. Calling one metric EUE is marketing, not math.

The benefits of EUE are numerous — for users, IT pros, executives and more. It enables you to have a dramatic impact on the people that depend on your infrastructure. Just a few of these benefits include finding, validating, scoping and fixing slowdowns and downtime that are impacting the business and users in short order by starting at the end-user and not the infrastructure.

- Tier one helpdesk is more effective in validating and documenting issues.

- Tier one helpdesk is more accurate in assigning problems to the right team, the first time through automated domain isolation.

- More problems can be solved without re-assignment or escalation.

- Easier to find underlying network health issues.

- Fewer highly skilled engineers are needed in this era of skill shortages.

While it may be easier to stay the course with your current processes and solutions, if you aren't accelerating your ability to identify, avoid or triage issues, you're likely to face some rough times ahead. User and executive patience is a thing of the past and digital transformation requirements that drive your business and that of your partners (or competitors) are speeding ahead as well. If you can't keep up, much less gain an advantage, you may be left behind — both as a business and as professionals. Check out Observer EUE in action. You have nothing to lose and visibility to gain.

VIAVI

Learn more about the
New Age of Observability
and see the VIAVI NPM Solution at:
viavisolutions.com/network-performance-monitoring

VIAVI

VIAVI Solutions