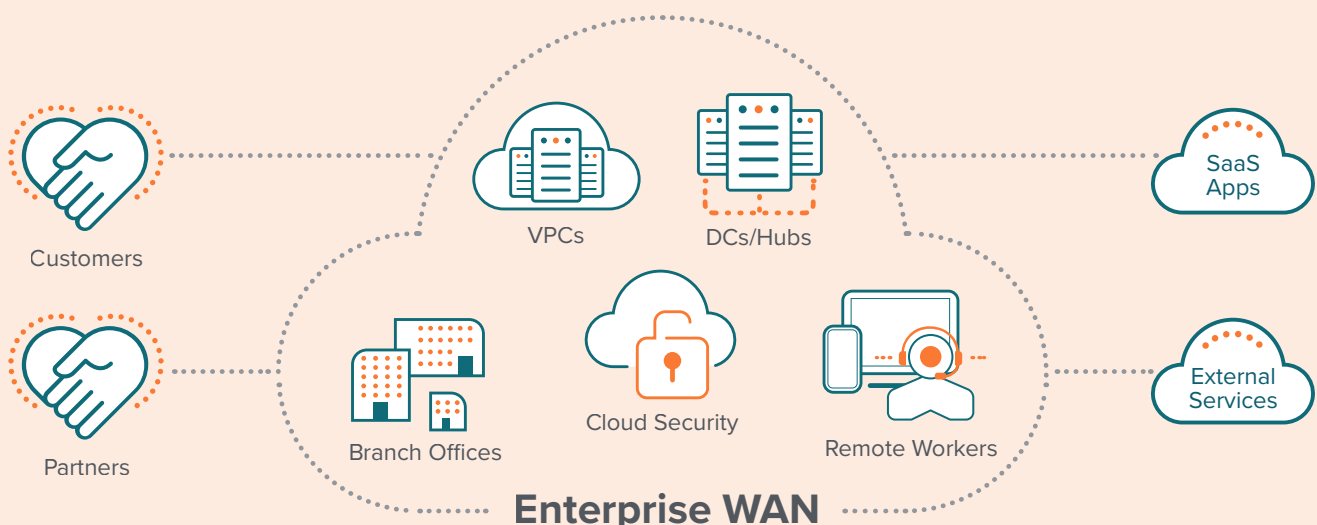


# SD-WAN MONITORING

## Solution Brief

Digital transformation is accelerating within the enterprise, as businesses seek to improve agility, avoid disruption, and gain competitive advantage. As part of this transformation, enterprises are increasingly leveraging cloud-based applications and services and embracing mobility and a distributed workforce. Bandwidth consumption is dramatically expanding to accommodate SaaS and cloud, and the prospect of rising transport costs and suboptimal app performance is driving enterprises to move away from legacy WANs in favor of WANs that are software-defined, Internet-centric, and architected for optimal interconnection with cloud and external services. This transformation of the enterprise WAN brings new visibility needs.

### Enterprise visibility needs



Customer/partner  
digital experience

Underlay/overlay, cloud-based security,  
and internal app performance

SaaS app reachability  
and performance



## From readiness through operations

There are two primary challenges to WAN modernization success. The first is lack of data to baseline and make architecture and provider selections of ISPs and peering locations for optimal connection to on-premises data centers, public cloud, SaaS and other external services. The second is increased dependence on third party apps and services that are reached across many external providers and an unpredictable Internet, where lack of visibility can hamper problem domain isolation, prevent fast issue resolution and impact business outcomes. IT and network teams need visibility that goes beyond simple edge-to-edge performance statistics provided by SD-WAN vendors. To assure sound readiness audits, architecture planning, deployment and efficient operations, enterprises need to see end-to-end underlay/overlay connectivity and app experience.



## Comprehensive vantage points needed

To ensure availability and performance of cloud and SaaS apps for all users across the enterprise WAN fabric, visibility must be available from a variety of vantage points including endpoint devices for remote workers, internal networks for branch and hub, and regional Internet locations for rapid diagnostic corroboration. In addition, IT and network operations teams need to quickly be able to discern whether provider or Internet problems are due to normal errors or due to major Internet outages in order to properly communicate to internal stakeholders and to determine the most effective escalations with external providers.



## Multilayer correlation is critical

The measure of WAN modernization success is improved app and cloud availability and performance for all enterprise users and business systems, not simply network latency and packet loss. It is therefore critical that all vantage points provide visibility into underlay and overlay network metrics and paths, web server and user experience/app-layer performance, as well as Internet routing issues and traffic outages. This multi-layered visibility provides IT network teams the data they need to effectively plan and prepare for WAN transformations, as well ensure app and cloud performance for users across the WAN and beyond, regardless of underlying transport.



## The ThousandEyes difference

ThousandEyes combines visibility into application experience with deep insights into the Internet, cloud providers and enterprise networks in a single platform. We provide monitoring vantage points across the Internet, enterprise sites and end-user devices, and give you access to the industry's largest collective intelligence dataset. You get a real-time map of how your customers and employees reach and experience critical apps and services across private, Internet and cloud provider networks. The world's largest enterprises, cloud and SaaS providers rely on ThousandEyes to help them deliver great digital experiences, successfully adopt the cloud, and deploy SD-WANs.

ThousandEyes uniquely offers an unmatched set of vantage points to meet the full spectrum of planning and operational visibility needs for ensuring WAN performance and empowering employee and customer digital experience.

ThousandEyes Vantage Points	Visibility provided by ThousandEyes vantage points		
	Enterprise WAN	Employee Digital Experience	Customer Digital Experience
<b>Enterprise Agents</b> Deploy in enterprise campus, branch offices, hubs, virtual private clouds, and virtual networks to monitor WAN connectivity and cloud and SaaS applications	<ul style="list-style-type: none"> <li>Underlay between SD-WAN nodes (e.g., branch to hub and gateway)</li> <li>Underlay to cloud-based security gateway (e.g., Zscaler)</li> <li>SD-WAN overlay performance and policy routing validation</li> <li>Hub and data center to cloud reachability and performance</li> </ul>	<ul style="list-style-type: none"> <li>Branch to SaaS application reachability and performance</li> <li>Branch to internal app user experience</li> </ul>	<ul style="list-style-type: none"> <li>User experience of high-value customers and partners connecting to your digital properties and customer-facing SaaS applications</li> </ul>
<b>Cisco Networking</b> ThousandEyes is natively* embedded into eligible Cisco networking platforms	<ul style="list-style-type: none"> <li>Cisco Catalyst 8300/8200 Series Edge Platforms†</li> <li>Cisco 4000 Series Integrated Service Routers (ISRs)†</li> <li>vManage 20.6</li> <li>IOS XE Version 17.6.1** or newer</li> </ul>	<ul style="list-style-type: none"> <li>Cisco Catalyst 9300/9400 Series Switches</li> <li>DNA Center 2.2.2</li> <li>IOS XE Version 17.3.3 or newer</li> </ul>	<ul style="list-style-type: none"> <li>Cisco Nexus 9500/9300 series switches*</li> <li>NX-OS 9.3 release or newer ††</li> </ul>
<b>Cloud Agents</b> Globally distributed, pre-deployed and managed by ThousandEyes in 200 cities. Connected to Tier 1, 2 and 3 ISPs, broadband service providers and regional data centers of major cloud providers	<ul style="list-style-type: none"> <li>Baseline and comparison of ISP performance for branch and site connectivity</li> </ul>	<ul style="list-style-type: none"> <li>Baseline and comparison of local SaaS application performance</li> </ul>	<ul style="list-style-type: none"> <li>Reachability and customer digital experience over the internet</li> </ul>
<b>Internet Insights</b> Internet traffic outage detection based on collective intelligence	<ul style="list-style-type: none"> <li>Correlate WAN performance to macro Internet issues</li> <li>Determine if Internet traffic outages are impacting customer or employee digital experience</li> <li>Quickly communicate issues to customers/employees</li> <li>Work with ISPs for effective problem remediation</li> </ul>		

\*Native embedded agents require no additional hardware and are deployed via the appropriate Cisco central management platforms.

†All Cisco Catalyst 8300 Series Edge Platforms, as well as Catalyst 8200 Series platforms and 4000 Series ISRs with a minimum of 8 GB DRAM and 8 GB flash storage are eligible.

\*\*Cisco IOS XE 17.6 is targeted to be released in Q3CY21.

††Cisco Nexus 9500/9300 Series switches, running latest NX-OS System Software release 9.3 is targeted to be released in 2HCY21.

# Most correlated visibility in one view

ThousandEyes offers multilayered insights, from application experience down to network and internet issues, for every internal and external user that matters to your business.

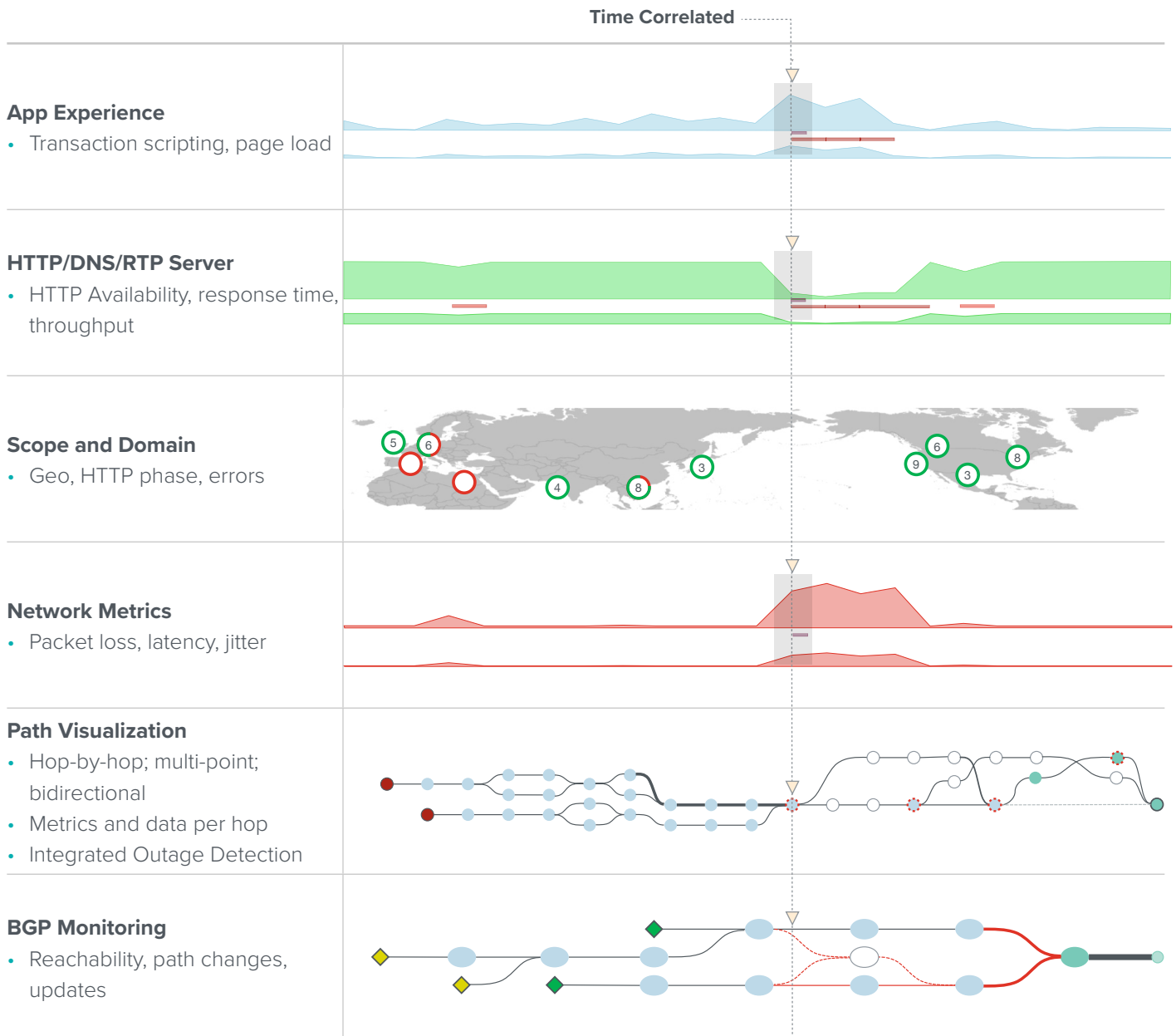


Figure 1. Correlated visibility in one view



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## ABOUT THOUSANDEYES

ThousandEyes delivers visibility into digital experiences delivered over the Internet, so companies can deliver superior customer and employee app experiences, successfully adopt the cloud and deploy SD-WANs.

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