

NTS NETWORK SOLUTION



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# NTS THOUSANDEYES

The world as we know it is changing. The cloud is increasingly used as the new data center, the internet the new network, software-as-a-service (SaaS) the new implementation stack and remote or hybrid employees the new standard. This development leads to enormous flexibility, but also creates external dependencies on third-party services. To avoid this, companies should bank on visibility in the way ThousandEyes provides it.

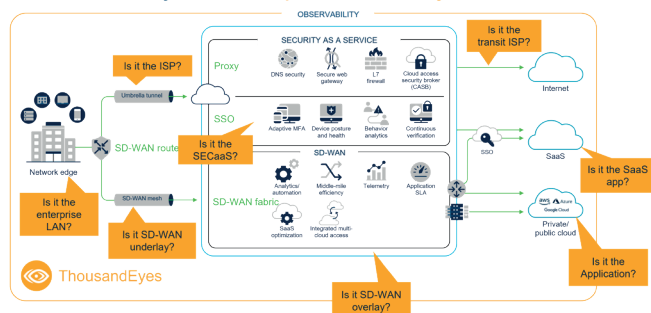
ThousandEyes is a cloud-based network and performance monitoring tool that provides visibility into any network an organization relies on – public or private. ThousandEyes has developed an approach based on an unmatched distribution of intelligent agents across the Internet and the enterprise, providing visibility to the end user. This tool provides the ability to analyze blind spots outside their own boundaries and a real-time map of how customers and employees are reaching and experiencing critical apps and services across traditional SD-WAN, Internet and cloud provider networks. The Enterprise Visibility, Remote Worker Visibility and Advanced Webex Visibility use cases are used to illustrate how enterprise, endpoint and Webex agents can be used to generate customer value.

## ENTERPRISE VISIBILITY

Digitally connected workplaces, SD-WAN architecture and the implementation of SaaS increase the demands placed on IT teams. The securing of a reliable application performance for networks and services is becoming increasingly difficult due to increasing external dependencies. When problems occur, network teams often lack insight into end-to-end dependencies such as ISP network performance,

SD-WAN, or SaaS applications to properly determine the root cause. The consequences are higher Mean Time To Identify (MTTI), higher Mean Time To Repair (MTTR), and more service disruptions. Service delivery requires end-to-end visibility, from switch to SaaS and everything in between.

### ThousandEyes: Enterprise Visibility



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## Enterprise Visibility issues

## THE SOLUTION

ThousandEyes offers comprehensive insights into WAN connections (broadband, VPN, SD-WAN, LTE, 4G or MPLS), cloud or hybrid infrastructures (AWS, Azure, GCP, SAP cloud, etc.) and cloud services (SaaS apps, UCaaS, SECaaS, etc.). Thousand Eyes Enterprise Agents<sup>1</sup> and Thousand Eyes Cloud Agents<sup>2</sup> form the basis for this. For the analyses, various metrics are correlated at the network and application level and their dependencies are illustrated including a hop-by-hop network path. Detailed insights into underlay and overlay network performance are obtained by correlating the overlay visibility with a hop-by-hop layer 3 underlay path.

<sup>1</sup> Software-based agents that are easily installed on your own network, in data centers, branch offices and virtual private clouds.

<sup>2</sup> Distributed, preinstalled and managed by ThousandEyes in 200 cities worldwide. Connected to Tier 1, 2 and 3 ISPs, broadband service providers and regional data centers of major cloud providers.

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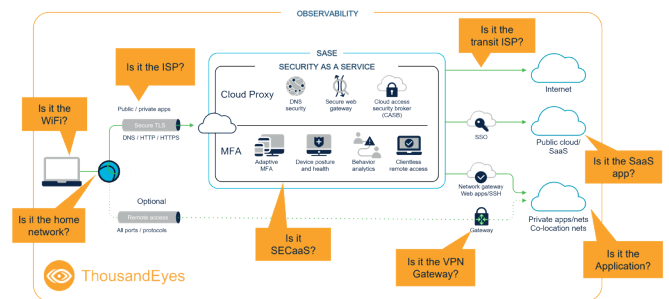
This enables:

- » Visibility of Hop-by-Hop network paths across ISPs and cloud networks and integrity of eBGP routing (external border gateway protocol)
- » Proactively benchmark and monitor service providers to ensure that agreed Operation Level Agreements (OLAs) and Service Level Agreements (SLAs) are met

A major added value of ThousandEyes is the simple sharing of provided views, analyses and data with external providers or other specialist departments through shared links. Problems can thus be localized more quickly and the actual causes identified more easily.

collaboration tools such as Office365 and Cisco Webex, and to take corrective action. When your own employees can't access applications and services, it can negatively impact productivity and therefore business success. This requires end-to-end visibility from the remote endpoint down to the performance of SaaS and locally hosted applications.

## ThousandEyes: Remote Worker

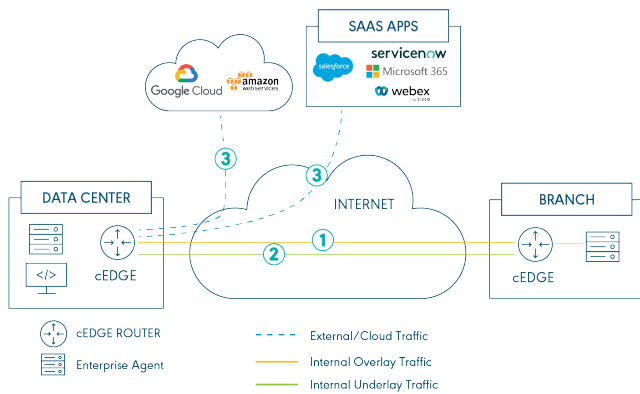


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## Remote worker visibility issues

### THE SOLUTION

ThousandEyes collects network diagnostic metrics and provides end-to-end transparency for any app, whether SaaS or internally hosted, across any network. This makes home/office networks transparent, as if they were their own branch offices. This is enabled by ThousandEyes Endpoint Agents, a compact service that is installed on laptop and desktop endpoints. Regular monitoring of user experience is performed using HTTP and network monitoring tests, which include visibility into routing paths. This enables real-time identification and resolution of issues with devices, home wireless networks, ISPs, VPN gateways, and even third-party data centers (SaaS applications).



## Example architecture and test paths

### REMOTE WORKER VISIBILITY

Today, work takes place not just in the office, but in a wide variety of locations. In-house applications are often SaaS-based, and remote workers make it difficult to identify the causes of network problems and performance losses of productivity and

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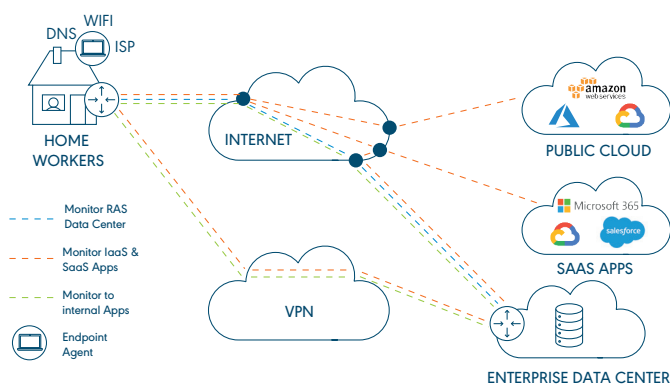
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Optionally available browser-based plugins combine endpoint agents performance data of the page setup from your teams' browsers with wireless and wired network monitoring so network and IT teams can quickly isolate the faulty domain and identify next steps to resolve issues. Additionally, ThousandEyes can automatically monitor user interactions with pre-defined business applications such as Salesforce or Office365 Suite by collecting session data. This allows problems with collaboration and UCaaS applications such as CISCO Webex, internal business applications or web and SaaS services, to be quickly tracked down and resolved. With the help of detailed waterfall diagrams and load metrics for web pages, the entire employee journey to business-critical applications becomes traceable and transparent, regardless of where the employees are located.

By using Endpoint Agents, the following analyses are possible for Remote Worker Visibility.



Example architecture and test paths

## ADVANCED WEBEX VISIBILITY

Virtual meetings have become an indispensable part of everyday work. Whether in the office, at home, or in your favorite café – collaboration (meeting, calling, and file exchange) is possible at any time and any place.

For collaboration, the Internet has become the link that connects users to applications to enable productive work.

Due to the decentralized nature of the internet, data traffic that is connected through the same application, can take hundreds (or thousands) of different routes, which makes anticipating and managing them difficult. When users report a problem, IT has limited insight into the end-to-end path to determine the root cause. ThousandEyes provides troubleshooting support here and can provide the right perspective on problems in response to many questions:

- » Why is my collaboration software slow?
- » Why am I having video and audio problems?
- » Why does my Webex session have poor audio quality?
- » Why is the upload of files so slow?

## THE SOLUTION

Using Webex Agents now integrated with Cisco Webex data centers, ThousandEyes provides comprehensive, two-way visibility into the Webex environment. This gives IT teams a clear line of sight between user sites and Webex services. This helps identify any network nodes along the forward and reverse paths that may be impacting user connections to Webex services.

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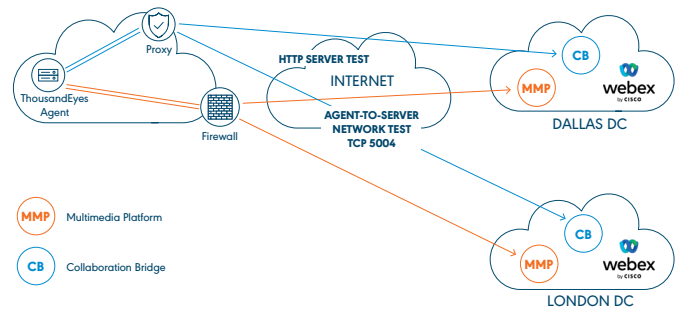
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For optimal performance and an outstanding user experience, even more detailed error analysis can be enabled through direct integration with the Webex Administration Portal.

Automated Session Testing offers great added value. This provides insight into the real-time performance of business-critical collaboration and call center applications. Collaboration apps dynamically select the best infrastructure components to connect users based on conditions. This behavior can change between individuals and sessions, and therefore monitoring must be dynamic. By automatically creating tests and their intervals for all users and each session with active infrastructure components, NTS customers gain an accurate perspective for effective monitoring and troubleshooting.

- » Webex Cloud Agents & Enterprise Agents: Proactively monitor paths from the enterprise to the Webex service
- » Endpoint Agents & Automated Session Testing (AST) for faster troubleshooting of network issues for remote workers
- » Targets of a measurement do not have to be only Webex Services (O365, etc.)
- » Measurement results can be easily shared (shared links) with business departments or providers, etc.



### Example architecture and test paths

### SUMMARY

Which companies benefit the most? Companies that are heavily dependent on Internet-based services and, for example, meet one or more of the following parameters:

- » High number of employees working remotely
- » Access to SaaS applications and use of collaboration solutions (Webex, Teams, Office365, Salesforce, SAP, etc.)
- » Distributed network with many branch offices
- » Application performance and stability that are critical (e.g. webshop, online banking, service portal)

Have we piqued your interest? We offer customized solutions and individual support in the form of design and implementation services as well as analysis activities on a project basis.

If you have any questions, we are always there for you. This way, you can continue to focus on your core business while we develop future-oriented solutions for you.





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