

## White paper

# Managing SaaS & Cloud Services Performance

With the staggering volume of applications (e.g. cloud, mobile, etc.) being deployed daily, today's networks must have the resiliency, scalability, and inherent security critical to achieving optimal performance for end users. Based on those numbers, the potential impacts on performance and cost for those responsible for monitoring and managing network and application performance (NAPM) cannot be underestimated.

That is why organizations and enterprises around the world understand that with more data and more applications come greater risks, including degradations and hacks, that can bring IT infrastructures and businesses to a crashing halt. And that is also why 360° visibility into networks and applications becomes essential to troubleshoot and mitigate issues while helping to accelerate the identification of potential performance issues at the transaction level.



<sup>1</sup><https://www.bettercloud.com/monitor/wp-content/uploads/sites/3/2017/05/2017stateofthesaaspoweredworkplace-report-1.pdf>

<sup>2</sup><https://www.bettercloud.com/monitor/wp-content/uploads/sites/3/2017/05/2017stateofthesaaspoweredworkplace-report-1.pdf>

<sup>3</sup><https://www.nsslabs.com/company/news/press-releases/nss-labs-predicts-75-of-web-traffic-will-be-encrypted-by-2019/>



Because many organizations do not inspect data as it moves in and out of the network, it creates a number of challenges, especially around those software-as-a-service (SaaS) and cloud hosted applications (Office 365, Google Suite, Salesforce) that are not managed out of the data center.

These include:

- **Encryption**, which leads to monitoring and troubleshooting challenges since it creates barriers to network monitoring. Additionally, encryption is becoming more sophisticated (e.g. Diffie Hellman, TLS 1.3), which increases the difficulty of maintaining visibility on these flows.
- **Latency between clients and servers**, which is higher, less predictable, more complex (with hybrid clouds and applications), varies frequently, and is harder to control. It also has a significant impact on the end user experience (EuE).
- **IT organizational dynamics**, which creates management issues since most IT teams do not control the network end-to-end and may not have visibility into the technologies used, the paths taken, and the network conditions. This is compounded by the sheer volume of users, especially across the cloud.
- **Shadow IT**, which provides no pre-production testing, creates network capacity planning challenges, and offers limited visibility into business unit subscriptions.

As-a-service environments also create NAPM complexity as multiple SaaS applications are often integrated into one user interface (UI) while, in platform-as-a-service (PaaS) environments, customer code can be hosted on a single platform (e.g. force.com).

So how do we effectively manage performance for SaaS and cloud environments? Let's delve into a number of ways to meet this challenge.

## What can be achieved at the TCP level?

We know that while encryption limits visibility to the TCP layer and TCP-based metrics, we also know a certain amount of information is available at this level.

Most of what can be achieved at the TCP level is limited to **mean time to innocence (MTTI)**. Here you will look at overall server processing times and network conditions to identify where degradation exists, whether that is in the cloud or a connectivity issue. This will help eliminate finger-pointing and provide a base from which to start the identification process. However, this will not provide the root cause of the degradation.



That is because the TCP approach is unable to handle situations such as:

- **Complex SaaS**, where multiple SaaS applications are integrated in one UI
- Connections between **SaaS and internal applications**
- **Mix of SaaS and PaaS**, where your own code is running in the cloud platform

So by moving beyond MTTI, we can look at encryption. Whether it's HTTPS or port 443, an NAPM solution can provide full transactional visibility beyond network latency, end user response times (EURT), server response times, etc.

We can also address changing technical requirements by decrypting HTTPS without agents and/or decrypting HTTPS traffic without knowing the private encryption key. This allows for greater visibility into the traffic to find the root cause of the problem.

## How to gain and win back transaction visibility on SaaS and cloud applications

Overcoming the challenge of encryption is key to maintaining the ability to manage EuE and deliver:

- Accelerated root cause analysis
- An adequate level of performance through more efficient vendor management
- End-to-end performance optimization of your applications

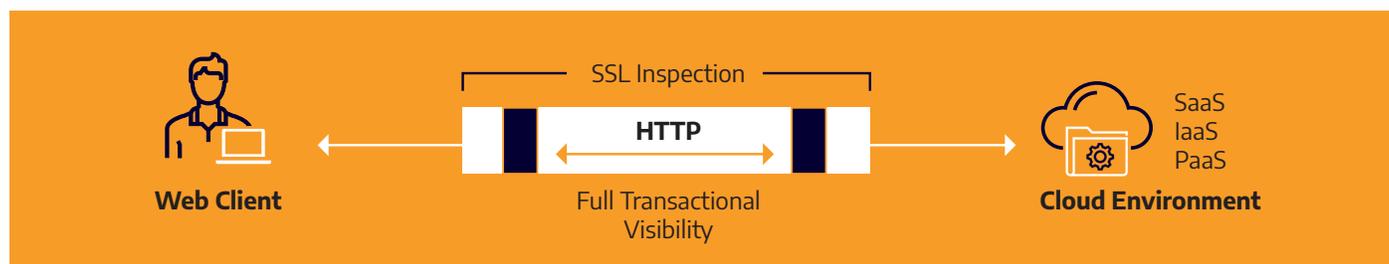
Without any appropriate evidence, your team will most likely lack the necessary arguments to deliver satisfactory IT services as well as meet end user service expectations and agreements. The right combination of secure sockets layer (SSL) inspection and an NAPM solution, such as Skylight™, can provide the 360° visibility on key encrypted flows (i.e. without agents or access to the encryption keys).

By leveraging an NAPM solution that provides SSL inspection between the encrypting and re-encrypting process (i.e. as data moves between the web client and SaaS and cloud environments), you will see all transaction activity. It also enables support for all types of encryption as well as works for any TCP port used for TLS communications.

### Snapshot: Managing SaaS and cloud hosted application performance

In this scenario, the organization is using Salesforce's force.com PaaS to host code. This is a common situation as force.com does not own application features while developers write their code to add pages to force.com. Real-time transaction visibility provides a way to determine if degradations or performance issues reside in force.com or in the individual application's code. This accelerates resolution as it expedites troubleshooting or the transmission of helpdesk tickets to the responsible parties.

### Skylight sensor



## About Accedian

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