

# Microsoft Office 365 Performance Management

Businesses are embracing Microsoft Office 365 for ease of administration, predictable costs, regular software updates, and more. The growth of Office 365 has been explosive. Today there are over 155 million active commercial users<sup>1</sup>.

Modern workforces are increasingly reliant on Office 365 and other Software-as-a-Service (SaaS) applications. For many workers, productivity depends on the availability and performance of SaaS. However, 42% of enterprises report at least half of their distributed and international employees experience consistently poor SaaS performance<sup>2</sup>.

This puts IT application owners in a difficult position. They have less visibility and control over SaaS than applications that run on-premises yet remain accountable to end users and executives.

To fully realize the benefits of Office 365 and other SaaS applications, organizations need integrated solutions that provide user-to-cloud visibility as well as the means to improve performance.

## Challenges

The SLAs for Office 365 guarantee uptime and email delivery time. However, Microsoft cannot ensure that end users will see good performance because its span of control stops at the edge of the cloud.

The performance of SaaS applications depends on many factors, including some that are dynamic. Most connections to Microsoft are made via the internet, which is inherently less reliable than private WAN links. Updates to application and device software can also change performance characteristics.

Workforces are more global and mobile than in the past. The length and quality of network paths between users and the Office 365 cloud can be very different. For mobile workers, the network path may change several times during the day.

Performance is also affected by security policy, which may require internet traffic to be backhauled through a security stack at a central point of access. This typically adds latency that slows application response times.

Visibility is another challenge with SaaS applications. You must be able to see what is affecting performance, from the user to the cloud, before you can improve it.

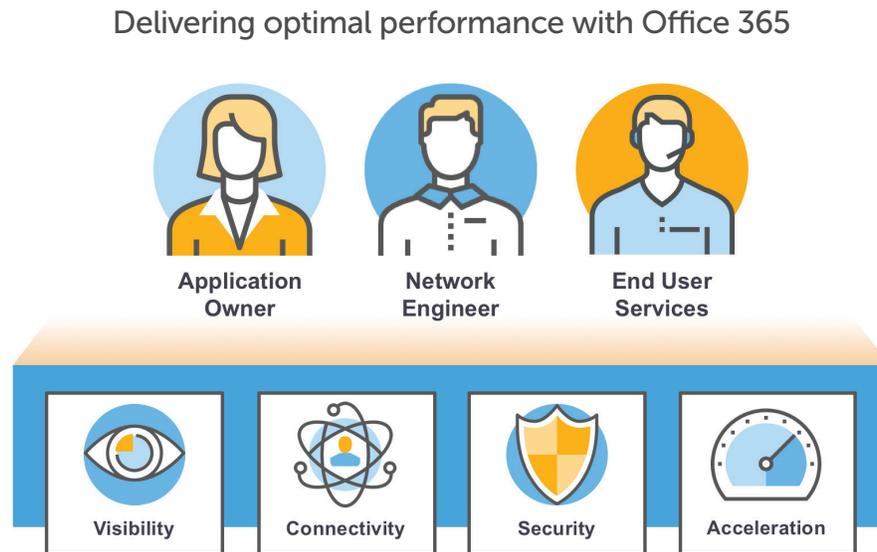
All things considered; it can be difficult for IT to ensure that end users see consistently good performance with Office 365 and other SaaS applications they rely on.

<sup>1</sup> Petri IT Knowledgebase: Office 365 Soars to 155 Million Active Users, 25 October 2018

<sup>2</sup> ESG: The Impact of Poor SaaS Performance on Globally Distributed Enterprises, May 2019

## The Riverbed Solution

Delivering optimal performance with Office 365 requires an integrated solution that combines user-to-cloud visibility, agile network connectivity, consistent implementation of security policies, and the means to accelerate applications. The Riverbed solution for Office 365 helps IT teams to shift from a reactive position to a proactive stance. We make it possible to identify issues early and maintain consistently high levels of performance as conditions change over time.



**Figure 1**  
Riverbed provides the IT team with user-to-cloud visibility, agile network connectivity, easy implementation of security policies, and the means to accelerate Office 365 applications.

### Visibility

Monitor the performance experience of each user. Proactively identify issues via automatic baselines for normal performance and the option to set thresholds on a per-activity basis. Quickly isolate the cause to the client device, network, or cloud.

### Connectivity

Rapidly set up an internet break-out to shorten the path from users to the Office 365 cloud. Automatically balance traffic across multiple internet WAN links. Use policy-based management to prioritize the traffic of critical applications and steer it onto the fastest path.

### Acceleration

Improve application performance by overcoming the effects of high latency due to long network paths between clients and application servers. Speed application traffic through bottlenecks with techniques that minimize data transfers and response times.

### Security

Easily apply the security policies of your organization with traffic path rules that send Office 365 traffic directly to Microsoft, via a cloud-based security service, or through an on-premises security stack.

## Proactively Identify and Troubleshoot Performance Issues

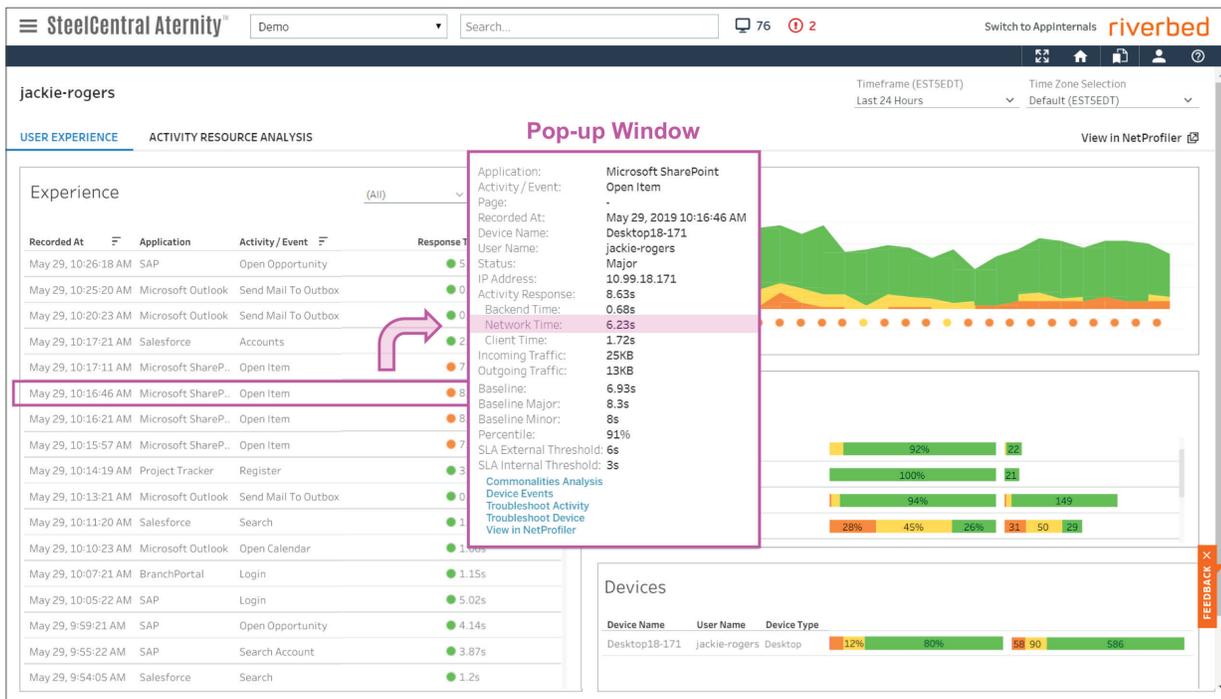
Get ahead of performance issues with Riverbed end-user experience monitoring (EUEM) that automatically generates a baseline for the normal performance of every application activity for each user. Set custom thresholds as needed for user groups and applications to align with your service objectives.

When performance deviates from the acceptable range, our monitoring solution generates an alert. Then it speeds resolution by isolating the cause to the Office 365 cloud (backend time), network (network time), or client device (client time) as shown in Figure 2.

If the client device is suspected, you can narrow the cause with three correlated streams of data: device health and performance, application performance as experienced by the user, and user behavior.

Locate the source of a network delay with integrated packet and flow data provided by Riverbed network performance monitoring (NPM).

When the problem is inside the Office 365 cloud, you can expedite resolution with Microsoft Support. Share data that shows how much delay is due to the device, network, and SaaS backend as well as differences in response times by device type and geography.



**Figure 2** Quickly identify a performance issue and isolate the cause to the Office 365 cloud (backend), network, or client device. In this case, it was taking longer than normal for Jackie Rogers to open a SharePoint file. The issue was easily isolated to the network for further troubleshooting.

## Follow Connectivity Principles

Riverbed SD-WAN can help you follow the Microsoft Office 365 Network Connectivity Principles. We make it easy to set up local internet break-outs that shorten the path from users to the cloud. Our SD-WAN gateways can recognize Office 365 traffic and route it directly to the nearest endpoint on the Microsoft Network.

## Give Priority to Critical Applications

Another way of improving performance is to prioritize and steer network traffic. Not all application traffic needs to move quickly. Delays to Exchange and Skype for Business affect workforce productivity more than a slow backup to OneDrive.

Policy-based SD-WAN management gives you the ability to prioritize network traffic to favor critical applications as shown in Figure 3. Just assign them a high or urgent priority for quality-of-service (QoS). Then specify criteria for path selection that will steer the packets of a critical application onto the WAN link that is performing best at the time.

## Apply Security Policies

Use Riverbed SD-WAN to manage Office 365 traffic in a way that aligns with your security policies. You can route the traffic of trusted SaaS applications directly onto the internet. Regulations or policy may require all SaaS traffic to pass through a robust security stack, whether on-premises or via a cloud-based security service. You may also need to apply a higher security standard for certain groups (e.g., executives). Whatever the policy, it can be implemented using an intuitive interface and natural language.

**Create Traffic Rule**

Position: >> Top <<

Name: Prioritize Microsoft Exchange

Site scope: Apply rule in all sites

Users / Source: All (excluding guests)

Applications / Target: Selected applications or groups  
Exchange Online (1<sup>st</sup> packet)

Path Quality profile: Latency sensitive metrics

Path preference:

1	RouteVPN
2	Internet

Rule fall through: On

QoS priority: High

Buttons: Cancel, Submit

**Figure 3**

This SD-WAN rule will steer the outbound traffic of Exchange Online onto the best available path (lowest latency, jitter, and packet loss) and give it a higher QoS priority than other applications when bandwidth is limited.

## Overcome Network Latency

SaaS application performance can suffer from network latency due to long distances between the server and users as well as the backhauling of traffic through a central security stack.

The impact of latency on Office 365 performance is worsened by the use of “chatty” protocols (e.g., TCP and MAPI) that may require hundreds of round-trip interactions between the client and server to transfer a relatively small amount of data.

Riverbed application acceleration improves Office 365 performance by streamlining “chatty” protocols. Fewer round trips are needed to do the same amount of work and users see faster response times.

## Speed Through Bottlenecks

Bandwidth constraints, or “bottlenecks”, also impact the performance of Office 365. The practice of backhauling internet traffic through a central security stack, combined with the escalating usage of cloud services, is overloading WAN links between many enterprise sites. Mobile workers also struggle with “last mile” bandwidth constraints on Wi-Fi, DSL, cable, and LTE connections.

Riverbed speeds file transfers through network bottlenecks by reducing the amount of data transmitted. Our application acceleration technology uses data streamlining techniques including deduplication, compression, and caching to reduce bandwidth consumption by as much as 97%.

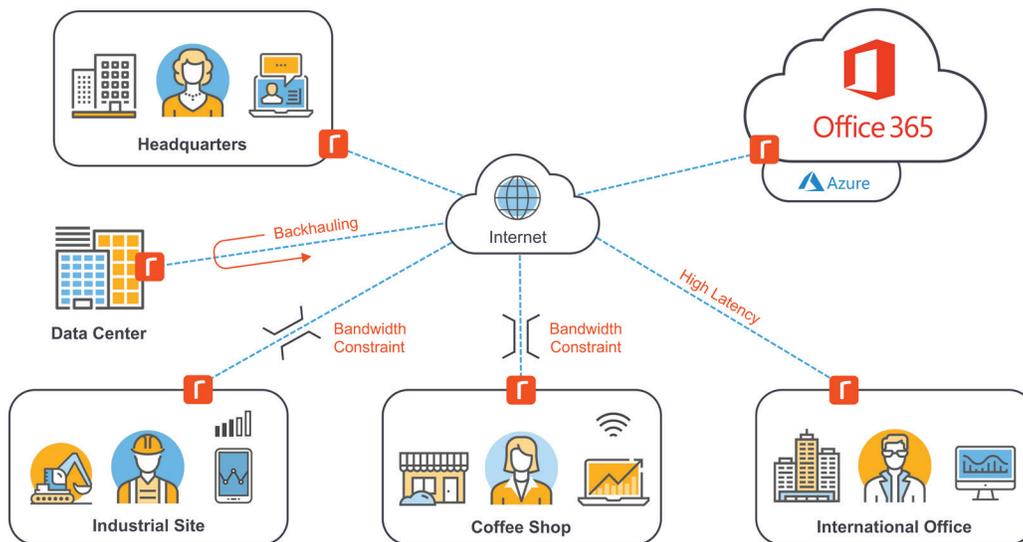


Figure 4

The end-user experience with Office 365 is highly dependent on network performance. Response times can suffer from latency due to traffic backhauling through a central security stack as well as from intercontinental separation between users and application servers. Mobile workers often contend with “last mile” bandwidth constraints that slow file transfers during periods of high network usage.

## Accelerate Office 365 Performance

Riverbed application acceleration can dramatically improve Office 365 performance and deliver consistent results as shown in Figure 5. Download time was improved by as much as 8x for a 10 MB file in a test that involved intercontinental distance, backhauling, and limited bandwidth. Performance improvements between 5x and 10x have been recorded in comparable tests that varied the file size, geographic distance, and available bandwidth.

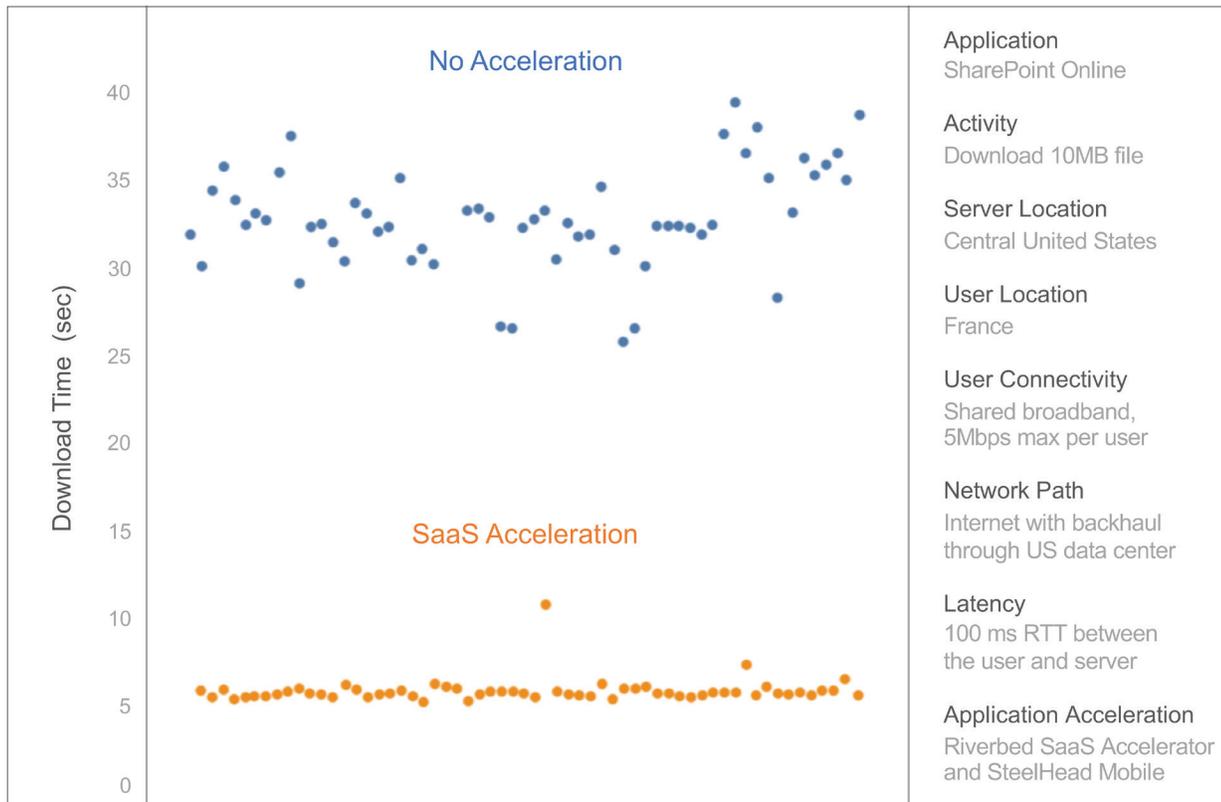


Figure 5

Riverbed application acceleration can deliver fast, predictable access to files stored in the Office 365 cloud.

### About Riverbed

Riverbed®, The Digital Performance Company™, is united in our purpose of *Advancing the Human Experience in the Digital World*. Behind every digital experience is a human one, and Riverbed enables organizations to measure digital experiences and maximize digital performance so they can deliver better and more powerful human experiences—for customers, employees, partners, patients, and citizens. Riverbed's Digital Performance Platform includes a combination of Digital Experience Management and Next-Generation Infrastructure solutions that ensure superior digital and user experiences, provides new levels of operational agility and accelerates business outcomes. Riverbed's 30,000+ customers include 100% of the *Forbes* Global 100. Learn more at [riverbed.com](http://riverbed.com).

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