



Top challenges migrating apps to Office 365

(and surprisingly simple solutions)



If you're like most IT and network leaders in the midst of an Office 365 migration, you've probably encountered a variety of changes and situations that you were totally prepared for and some, perhaps, that you weren't. Whether you're just beginning your migration or you're well on your way, Office 365 is a big deal in terms of its capabilities and in terms of how it affects your network.

Most organizations migrate in phases, which is smart. Different Office apps in the suite and the many services offered in the Enterprise plans come with their own set of features and use cases, and they all have a different impact on your connections and capacity. It's important to make sure that each app is optimized for the best performance.

The primary driver for Office 365—besides the fact that it will eventually be the only way to use Microsoft Office software—is to improve productivity and collaboration. The collaboration enabled by Office 365 through file sharing and online services can streamline processes and give your company a competitive advantage and result in faster time to market.

But how can people collaborate effectively if their apps are slow to respond, or their video quality is poor, or their connections get dropped? Collaboration and productivity are the key advantages of Office 365, and that's why it's so important to focus on user experience as you migrate.

In this document, we'll take a look at the key apps and services in the Office 365 suite, and we'll offer tips and tricks for successfully migrating and deploying them without incident and deliver a fast user experience for new levels of productivity and collaboration.

The applications and services we'll discuss, along with their challenges and solutions, include:

- Office 365 ProPlus
- OneDrive for Business Sync
- Exchange Online and Outlook
- SharePoint
- Skype for Business and Teams



OFFICE 365 PROPLUS CHALLENGES

ProPlus is often the plan with which organizations begin their migration to Office 365. This suite includes Word, Excel, PowerPoint, OneNote, and Outlook and, while most people are quite familiar with these applications, using them in the world of Office 365 is a significant change for users and administrators alike. What changes? Well for one thing, the apps' heavy reliance on OneDrive, the Microsoft online file hosting and sharing platform.

When editing documents in the ProPlus suite, Office 365 typically won't use the local cached version of the doc, instead leveraging the document from OneDrive. By opening the online version, Office 365 enables sharing so other users can collaborate within the document.

It's a great feature with capabilities that can have a huge impact on productivity and collaboration, but if your network isn't up to the task, your users will be frustrated and will be more likely to use local documents, negating the advantages of the Office 365 platform.

WHAT ZSCALER RECOMMENDS

It starts with thinking differently about these apps, and the Office 365 suite as a whole. The fact is that Office 365 apps and services represent traffic, and they shouldn't be treated like just any internet-bound traffic. It's important to be able to identify Office 365 traffic and prioritize it over other, less-critical traffic, so it gets to Microsoft as quickly as possible.

Secondly, Microsoft has updated the categorization of its Office 365 connection endpoints on the Microsoft network. Located around the world, these destination endpoints are now categorized by "Optimized," "Allow," and "Default." These definitions can help you determine which Office 365 connections should be fast tracked to the Microsoft network.

To help simplify the process of identifying and prioritizing traffic, Zscaler™ has a one-click feature that automatically categorizes Office 365 traffic and optimizes its routing with a single click. It's a significant time-saver and a way to be sure that your users get the Office 365 experience they need.



ONEDRIVE FOR BUSINESS SYNC CHALLENGES

Here's a story: A user, let's call him Dave, gets a new Office 365 account. Dave's laptop has 20GB of documents and, because Dave is super excited to start using Office 365, he decides to run OneDrive for Business sync. And guess what happens to your network gateway.

There are countless stories of companies' networks getting blown up by OneDrive for Business sync. The challenge is that OneDrive is central to pretty much everything Office 365 does, so you have to account for its activity. On the other hand, as a file hosting site, it's easy to overlook its potential impact. Don't let that happen. If unaccounted for, OneDrive performance problems can begin to cascade through the rest of the Office 365 ecosystem.

WHAT ZSCALER RECOMMENDS

While tracking latency is important with OneDrive, controlling bandwidth at the network level is often more important. Configuring upload and download limits is key to helping prevent OneDrive from oversaturating your network connections.

But while defining limits can help, it really depends on where you set those limits. At the client level, you could set up something that allows only 1MB up and 10MB down, but once you aggregate that over hundreds of users at the branch, you quickly need to abstract bandwidth control to the network layer.

Placing bandwidth control at the local egress point of the branch office is the best place for it. Because Microsoft recommends local egress as the best connection method for Office 365, controlling this connection will be key to guaranteeing a healthy Office 365 deployment and branch connectivity.

Zscaler has gone to great lengths to enable superior, granular control over these local egress connections. With Zscaler Bandwidth Control, a part of the Zscaler for Office 365 service, you can set comprehensive rules around Office 365 traffic and open-internet traffic. For example, you can guarantee 40 percent for Office 365 traffic, but limit maximum use to 50 percent of total bandwidth so that OneDrive connections don't decimate the rest of your local breakouts.



EXCHANGE ONLINE AND OUTLOOK CHALLENGES

Exchange Online isn't quite as sensitive to latency as other Microsoft products and services. Email is not a real-time service, so a delay in email delivery won't even be noticed by the end user. But there are two challenges with Exchange.

Challenge 1: Browsing online calendars can be frustrating if performance isn't up to speed. A common need for admins and executive assistants, the user experience is often terrible when trying to pull up multiple calendars online. You can guarantee you'll hear about it when the CEO's admin has to wait four times longer every time a meeting is scheduled.

Challenge 2: This one is much more hidden. Outlook opens a ton of connections to Exchange—almost 20 per user (see screen capture below). In the appliance world, too many concurrent connections leads to a swift demise, because appliances have a finite number of connections they can handle at one time.

When you deploy Office 365, your concurrent connection count will go through the roof, and many companies aren't ready for the gateway onslaught.

WHAT ZSCALER RECOMMENDS

Because of the concern about connection overload, Microsoft, in its Office 365 connectivity guidance, recommends bypassing your proxies. By choosing not to route your traffic through your proxy appliances, you can avoid the performance slump that often occurs with Office 365.

But when bypassing proxies, the logical question is: How do I restore security? The Zscaler Cloud Security Platform with Cloud Firewall is a great option. It enables full control across your Office 365 traffic, while using a full security stack to secure the rest of your traffic going to the open internet.

```

TCP 10.32.147.199:49362 173.194.33.21:443 TIME_WAIT
TCP 10.32.147.199:49610 23.72.104.134:443 ESTABLISHED
TCP 10.32.147.199:49623 74.125.239.37:443 ESTABLISHED
TCP 10.32.147.199:49627 132.245.4.137:443 ESTABLISHED
TCP 10.32.147.199:49633 138.91.137.28:10106 ESTABLISHED
TCP 10.32.147.199:49637 138.91.137.28:10106 ESTABLISHED
TCP 10.32.147.199:49645 10.32.146.250:139 TIME_WAIT
TCP 10.32.147.199:49647 70.37.97.234:443 ESTABLISHED
TCP 10.32.147.199:49667 70.37.97.234:443 ESTABLISHED
TCP 10.32.147.199:49668 70.37.97.234:443 ESTABLISHED
TCP 10.32.147.199:49670 70.37.97.234:443 ESTABLISHED
TCP 10.32.147.199:49671 70.37.97.234:443 ESTABLISHED
TCP 10.32.147.199:49672 70.37.97.234:443 ESTABLISHED
TCP 10.32.147.199:49682 161.69.92.10:443 ESTABLISHED
TCP 10.32.147.199:49683 23.72.95.56:80 ESTABLISHED
TCP 10.32.147.199:49684 157.56.245.113:443 ESTABLISHED
TCP 10.32.147.199:49696 132.245.113.24:443 ESTABLISHED
TCP 10.32.147.199:49698 132.245.113.24:443 ESTABLISHED
TCP 10.32.147.199:49704 65.55.127.47:443 ESTABLISHED
TCP 10.32.147.199:49706 65.55.127.47:443 ESTABLISHED
TCP 10.32.147.199:49708 132.245.113.24:443 ESTABLISHED
TCP 10.32.147.199:49710 132.245.113.24:443 ESTABLISHED
TCP 10.32.147.199:49715 65.55.127.47:443 ESTABLISHED
TCP 10.32.147.199:49716 65.55.127.47:443 ESTABLISHED
TCP 10.32.147.199:49717 65.55.127.47:443 ESTABLISHED
TCP 10.32.147.199:49718 65.55.127.47:443 ESTABLISHED
TCP 10.32.147.199:49720 65.55.127.47:9999 SYN_SENT
TCP 10.32.147.199:49722 157.56.245.118:443 ESTABLISHED
TCP 10.32.147.199:50012 132.245.9.44:5313 SYN_SENT
TCP 10.32.147.199:50017 132.245.113.23:443 ESTABLISHED
TCP 127.0.0.1:5679 0.0.0.0:0 LISTENING
TCP 127.0.0.1:7438 0.0.0.0:0 LISTENING
TCP 127.0.0.1:8888 0.0.0.0:0 LISTENING
TCP 127.0.0.1:8888 127.0.0.1:49592 TIME_WAIT
TCP 127.0.0.1:8888 127.0.0.1:49602 TIME_WAIT
TCP 127.0.0.1:8888 127.0.0.1:49603 TIME_WAIT
TCP 127.0.0.1:8888 127.0.0.1:49604 TIME_WAIT

```

Outlook opens upwards of 20 connections per user



SHAREPOINT CHALLENGES

Nothing gets users more excited than SharePoint. While it focuses on document management and storage, it is highly customizable. Users can create their own forms, navigation and workflows, or apply custom branding or themes. It can truly change the way people work and, due to its nearly unlimited uses, many departments are heavily leveraging SharePoint to solve a range of issues.

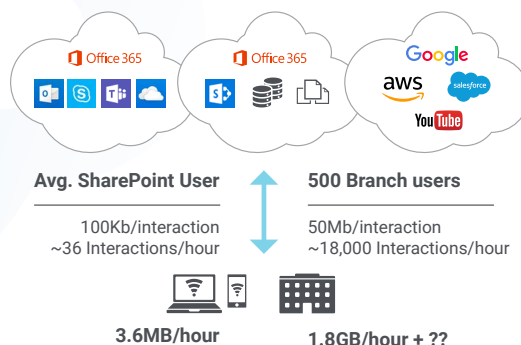
While its potential for improving collaboration can't be taken lightly, its ability wreak havoc on the network often is. Because users are eager to take advantage of SharePoint's potential to improve internal processes, its use can scale quickly. In addition, the SharePoint pages and document repository is often overloaded with gigantic documents, graphics, and cat videos, further compounding the situation. A critical step in SharePoint deployment is capacity planning.

WHAT ZSCALER RECOMMENDS

So, how much capacity should you plan for? Though it's difficult to predict, some guidance suggests starting out with an assumption of 3.6 MB per user per hour. While this seems low, when you compound it over a branch with 500 users, your requirements quickly escalate.

In reality, though, you should plan for much more capacity. As users get a taste of the power of SharePoint, and your general Office 365 requirements scale, your need for bandwidth can get away from you in a hurry and performance can degrade just as quickly.

The good news is that Zscaler can elastically scale to your Office 365 traffic demands. No matter how much bandwidth your users will need to consume, we'll have you covered. The Zscaler cloud was built for scale (it's in the name!) and traffic spikes, even large ones, have little to no impact on your performance.





SKYPE FOR BUSINESS AND TEAMS CHALLENGES

We saved the biggest challenge for last. Why is Skype the most challenging of all the Office 365 apps? Skype for Business, a full-featured video conferencing platform, is all about real-time interactions, which means you must have the lowest of latency requirements. To deliver interactive video and voice, Skype must use UDP (User Datagram Protocol) traffic.

If there's any latency on this UDP traffic, your users will immediately feel the pain—there's nothing like a dropped video connection during an important meeting to pique users' ire. An important tip is to be careful not to route Skype UDP traffic differently than your Skype TCP traffic. If these two traffic patterns exit your network in different geographic regions, Microsoft's front doors can have trouble resolving these separate, but duplicate, Skype connections for the same user call, which again can lead to dropped connections.

By Microsoft's account, Skype latency shouldn't go above 150 ms end to end. To be safe, the end-to-end latency rate really should be lower. With miles of MPLS on the traditional corporate network, and stacks of latency-inducing appliances at the gateway, this requirement can often be a challenge. The kicker is that end users really don't appreciate your struggle. They've been using Skype for quite some time at home to call friends and relatives, and its performance has been rock-solid. It becomes a competition of your network vs. their home network—your network is losing, and your users' experience is suffering once again.

WHAT ZSCALER RECOMMENDS

There are two things to keep in mind. As mentioned, local egress is going to be the key, but it's also important to remain focused on your DNS strategy. When connecting to the Microsoft front doors, you'll want to make sure your users connect to the nearest local front door. Leveraging local DNS will make sure traveling users are always connecting to fast, local connections instead of getting routed to their home location. The good news is that Zscaler easily enables local DNS regardless of user connection.

Another consideration is what's known as "hairpinning," the way a remote user's traffic takes a tour through the data center before heading out to the cloud (then makes the same trip on its way back to the user). Microsoft recommends against hairpin connections. Simply put, forcing mobile users through a VPN and onto the network for security and control only to go back out again kills performance, especially on Skype calls.

Fortunately, the Zscaler cloud security stack can go everywhere your users go. Cloud delivery enables you to easily control and secure their connections while getting them onto the Microsoft network as fast as possible.

Where do you go from here?

The migration to Office 365 comes with a lot of promise to transform your users' productivity and collaboration. But like anything big and transformative, it also comes with some challenges. The reality is that Office 365 is one of the largest platforms your IT organization will ever have to move to the cloud.

By understanding what's ahead in the full Office 365 enterprise rollout, keeping your focus on user experience, and getting a little help from Zscaler, you can successfully navigate your migration and deliver world-class services that make your users and your boss happy.

About Zscaler

Zscaler enables organizations to securely transform their networks and applications for a mobile and cloud-first world. Zscaler connects users to applications and cloud services, regardless of device, location, or network, while providing comprehensive security and a fast user experience. All without costly, complex gateway appliances.