THIS IS YOUR ENTERPRISE ON OFFICE 365

Tony Summerlin
Senior Strategic Advisor, FCC
Tony Summerlin
Senior Strategic Advisor, FCC/CIO

Senior Strategic advisor for the **FCC/CIO office of the Managing Director**. Seasoned industry leader with **30 years of security and government consulting experience**
Agenda

A Transformation Journey to Support O365
Outlining what to prepare for in regards to your network/ security architecture, the impact to your teams, and how to set expectations with your business

The Best Approach
How to best follow Microsoft's guidance on connecting end-users to the Office 365 service and avoid the challenges common to Office 365 deployments within large organizations
Legacy Network & Security Architecture at the FCC

- 15 Locations
- 2000 Users
- 1000 Remote Users with VPN / Mobile Solutions

- 2 Data Centers in DC area
- 1 Internet egress point via MTIPS
The Rush to Move Email to Office 365
A Pending DC Consolidation Did Not Leave Time to Optimize Network & Security Architecture to Support O365

What You Need to Prepare For

**O365 not a normal project**
Deployment will impact all users and work streams will overlap multiple IT disciplines

**IT Culture Shift**
“Office 365” means different things to different people. What apps do you plan on using?

**How much bandwidth do you need?**
Plan for 40% increase for internet traffic and find an aggregator

**What metrics will you use to justify the additional bandwidth?**

**Session counts** on your firewalls and proxies become an issue

Email was moved successfully, but the **Backhaul Architecture** was impacting O365 performance and the end-user experience
Prepare for the Increased Load on Firewalls and Proxies
Bandwidth is Not the Only Problem – Session Counts & Non-Browsing Ports
Challenge Legacy Infrastructure

- Office 365 creates a high number of long-lived sessions that quickly exhaust firewall ports (we’ve seen 12-20 connections per user, per app)
- Around 4,000 clients can be supported by a single public IP safely (may require architectural changes)
- Some Office 365 apps use will require more than Web browsing (ports 80 / 443) – uses ephemeral ports

IMPACT ON THE USER EXPERIENCE
Random hangs and connection issues
Internet Breakouts Make a Difference
Visibility, Cost Savings, and Improved Performance

What You Need to Prepare For

Inconsistent End-User experience:
People will compare the experience at home vs. at the office

Fund local internet breakouts with MPLS savings: plan for 60% reduction in the DC

Distributed architecture policies
Appliance sprawl is hard to manage and extremely expensive – Use the cloud and find an ISP aggregator

The end user is everywhere: Where are your monitoring tools deployed?

Perception is Everything
Have metrics and data points ready to share

Leverage cloud-based security platform to enable a direct-to-internet architecture and improve O365 performance while enhancing security posture
Visibility Into the Deployment Was Crucial
Actionable Data Used for Capacity Planning and to Validate Deployment Assumptions
With Project Stakeholders

Real-time traffic volume trending

OneDrive traffic is low – is Box still being used?

Low Office 365 traffic in NY despite one of the largest offices – user issues?

Easily identify the top Office 365 users
Enabling the Business to Fully Leverage All O365 Applications
Optimize Connectivity to Prioritize O365 Applications and Deliver a Consistent End-User Experience

What You Need to Prepare For

Setup a reinvestment model
As you recognize savings, give some back to the business and invest the rest in technology to improve the end-user experience

Drive Business Engagement
Deliver frequent O365 training. Pitch O365 benefits to leaders (collaboration capabilities, less travel, & enhanced productivity)

Support All Ports & Protocols
Understand how to handle traffic outside of standard proxy ports

Changing remote access architecture to improve end-user experience.

Leverage cloud-based security platform to prioritize O365 traffic on the internet connections, deliver support for all ports/protocol to enable voice/video/desktop sharing features within collaboration tools, and deliver a consistent experience for remote users.
The Best Approach

1. Local Network Egress as close to user as possible
2. Unhindered access to Microsoft
3. Local DNS resolution
4. Optimized connectivity to Microsoft’s global network
Legacy Hub and Spoke is the WRONG approach
Local Network Egress: Cloud apps need low latency connections

Microsoft recommends against using a Hub and Spoke network with Office 365

Cloud apps like Skype and Sharepoint are designed for low latency direct access
Hub and Spoke and VPN requirements add unnecessary latency
The user experience for Office 365 is compromised
Backhauling and Security Appliance Sprawl adds extra cost to deployment
Simplify Office 365 Administration
Unhindered Access: Get Out of Managing an Evolving IP/Domain Whitelist

- Updates Office 365 connection details multiple times a week
- Traditional approach requires constant firewall updates to maintain connectivity
- Easily maintains updates without day to day Office 365 administration
- Fingerprints all Office 365 applications
  No more keeping up with URL and IP changes in the Office 365 applications.
- Automatically configures white list
  Exempts Office 365 traffic from authentication and SSL decryption, as recommended by Microsoft.
Minimize Office 365 latency with Local DNS
Guarantee a fast, local connection regardless of location

**Local DNS Architecture**
San Francisco User > San Francisco DNS > San Jose O365
Shortest path, fewer hops = faster user experience
**Latency: 12ms**

**Common Centralized DNS Architecture**
San Jose user > LA > Denver > Austin > Atlanta O365
Lots of hops increases: slower user experience
**Latency: 158ms (22ms+36ms+48ms+52ms)**
Optimize Connectivity with Bandwidth Control
Prioritize Office 365 Over Other Apps on Local Internet Connections

Enforce policies in the cloud, before the last mile bottleneck

Window shaping and bandwidth throttling will deliver a smooth user experience

Guarantee Office 365
40% of bandwidth

Cap YouTube traffic at 20%
Follows Microsoft recommended deployment model

Best possible user experience (closer to the internet, fast response times)

Rapid deployment (no hardware deployments or upgrades)

Investment protection and cost avoidance (no hardware or backhaul)

Visibility into all Internet traffic within seconds (single console)
Start Your Cloud Journey Right

Start your Cloud Journey Right
O365 is probably your first step to the cloud. Do it right so your company will want more, and have an app strategy that focuses on end-user experience

Challenge the Status Quo
Transforming your architecture to leverage both cloud-based and internal apps will force IT organizations to collaborate in new ways

Build a **Future Proof and scalable** network and security Infrastructure that delivers a **consistent user experience across all apps**, regardless of location