



## A cloud abroad in Paris

### A comparison of Gmail and Outlook

The speed and agility of your email service is more important now than ever before. One of the most widely used tools in business, email consumes 28 percent of the average workweek<sup>1</sup>, and communicating quickly and effectively gives employees more time to move projects forward.

G Suite and Microsoft® Office 365® both include email services—Gmail™ and Outlook® Online respectively. This report provides users with real-world data about how these services respond when the cloud tenant is established in the U.S. and offices across the pond use these shared resources.

We set up G Suite and Microsoft Office 365 accounts in the United States. Then, our team in France sent and received files via email with Gmail and Outlook Online and saved files to Google Drive™ and Microsoft OneDrive® for Business to determine which suite provided the better experience.

Sending and receiving attachments via email and saving those attachments to the cloud was quicker with the G Suite tools. Read on to get the whole story.

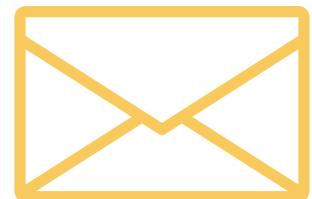
**SEND AND  
RECEIVE EMAIL  
ATTACHMENTS**

in up to

**38%**

**LESS TIME**

with Gmail



## More communicating, less waiting

We used laptops and smartphones to compare the experience of sending and receiving attachments on multiple operating systems (OS), browsers, and apps. For email, we used Gmail and Outlook Online. To upload or save attachments to the cloud, we used Google Drive and Microsoft OneDrive for Business respectively.

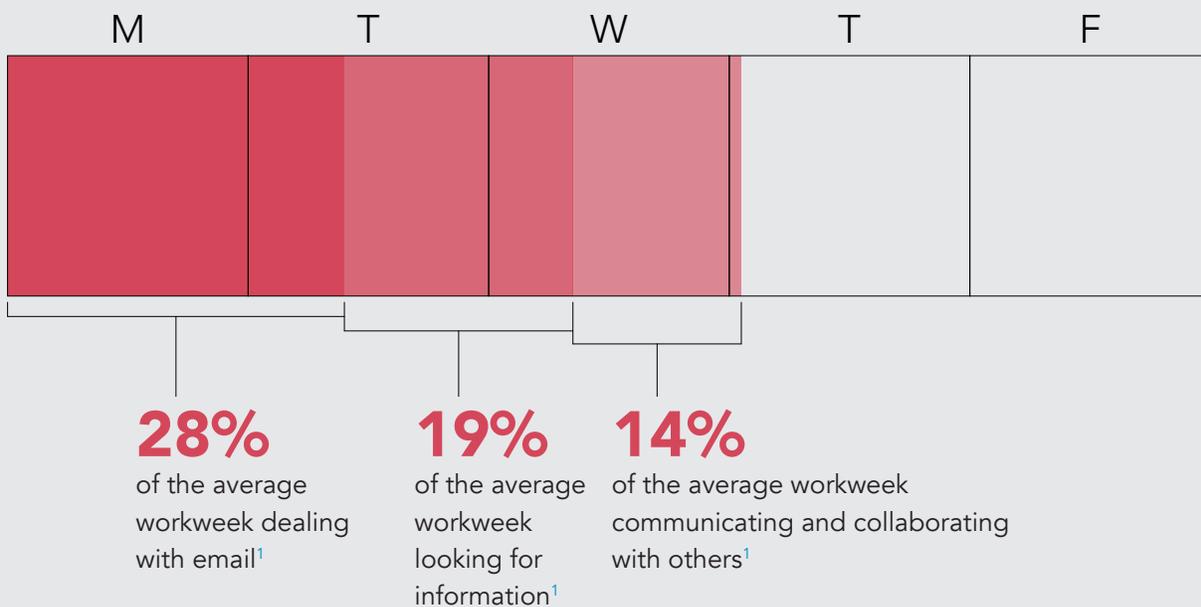
Before we started testing in France, we set up accounts in G Suite and Microsoft Office 365 at our hands-on testing facility in Durham, North Carolina. We used those accounts for testing in the United States. Then, our team in Paris used those same accounts for testing in France.

Read Principled Technologies' five-part series "[Not all clouds are created equal](#)" to see how G Suite and Microsoft Office 365 handled collaboration and productivity tasks in the U.S.

## Give projects more time and attention

How many times a day does your company use email to plan initiatives, get feedback from team members, and discuss projects? Using a quick email solution reduces wait times and frees up extra time to achieve more.

Workers spend:



The following scenarios describe the results of our testing in Paris, with a hypothetical headquarters in the United States. These scenarios give us a glimpse into how G Suite and Office 365 perform for employees that travel or who work outside of their U.S. headquarters.

## More time to strategize

Jacqueline is the senior marketing manager for the French division of a multinational retail chain. She's in charge of strategic planning for the holiday campaign at the company's flagship store in Paris.

Before she meets with her team in Paris to discuss this year's marketing strategy, she checks her incoming mail. A team member forwarded a picture they want Jacqueline to use in the digital campaign along with the photographer's fee schedule in the body of the email. Jacqueline saves that high-res photo to the project directory on Google Drive for future consideration. She also emails the meeting slide deck to the director of marketing for review.

Our tests showed that saving the high-res photo to the cloud with G Suite tools could shave almost 20 seconds off the time it would take to do the same thing with Microsoft Office 365 tools. In fact, completing these tasks with Gmail was less time-consuming than doing so with Outlook in every OS/browser/laptop combination we tested.

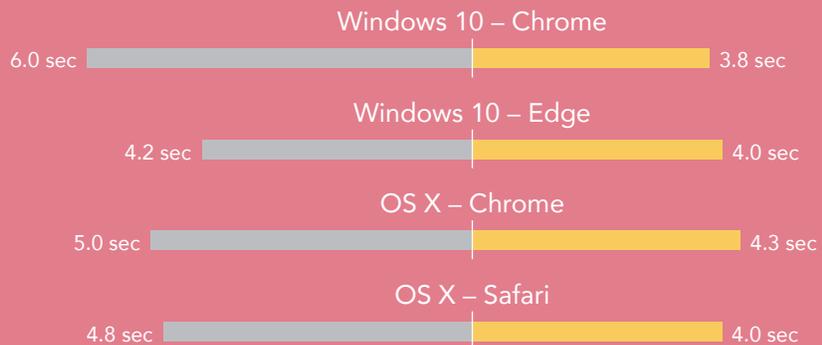
Save a high-resolution photo to cloud storage in up to

**85%**  
less time  
with Gmail



Send and receive a presentation in up to

**36%**  
less time  
with Gmail

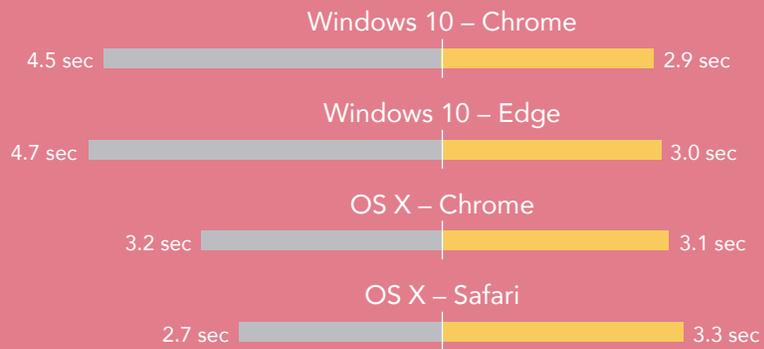


■ Outlook ■ Gmail

Once Jacqueline receives her marketing director’s approval of her presentation materials, she sends an email to the meeting attendees outlining her plan for the holiday season. She attaches a Word doc with performance data from last year’s promotion cycle and the high-res photo she wants them to consider. She hopes this gives everyone the information they need to bring their questions and ideas to the planning table.

We found in our testing that the two email solutions delivered comparable speed on these tasks, with Gmail being faster in some tests and Outlook Online being faster in others. The overall winner in both tasks (attaching a Word Doc and attaching a high-res photo) across all OS/browser/laptop combinations was Gmail.

Send and receive docs in up to **36% less time** with Gmail



Send and receive a high-resolution photo in up to **13% less time** with Gmail



■ Outlook ■ Gmail

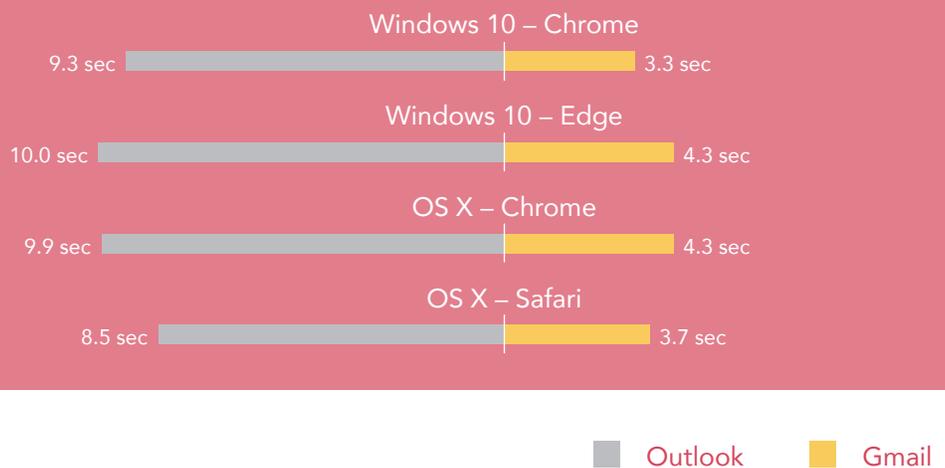
## More time to reach your audience

G rard is an organizational development specialist for the Paris branch of a financial institution with offices around the world. He's revising in-house rules and regulations to reflect new mandates from the French labor code. Because his parent company in the U.S. uses Gmail, every employee in the Paris office, including G rard, can open cloud-hosted files in less than half the time it would take if they used Outlook Online.

If you have a company with a thousand employees, each opening a shared document in email 10 times a day, you could reduce your company's cumulative wait time by 41 person-hours in the course of a week by using Gmail. That's one full-time employee's entire workweek!

Open a document from a shared link in up to

**64%**  
less time  
with Gmail



## More time for attention to detail on a smartphone

Daphn , based in Paris, is an associate for a financial consulting firm that supports trade, investment, and development in many countries. Her local clients often send her financial spreadsheets, tax returns, investment portfolios, and bank records that she uses to assemble plans for their future.

Our results show that using Gmail could save Daphn  frustrating delays every time she previews these email attachments on her phone.

When Daphn  uses her smartphone to retrieve information from a file during a lunch meeting with clients, the speedy connection with Gmail lets her accomplish the task more quickly than she could with Outlook Online. Outlook Online was faster in one instance, but by only a fraction of a second. In every other instance, Outlook Online took longer—from 5 seconds to a minute and a half longer—to preview anything! That's a long time to sit across from one another in silence.

Preview a 1.3MB  
DOCX in up to

**89%**  
**less time**  
with Gmail



Preview a 4.4MB  
PPTX in up to

**85%**  
**less time**  
with Gmail



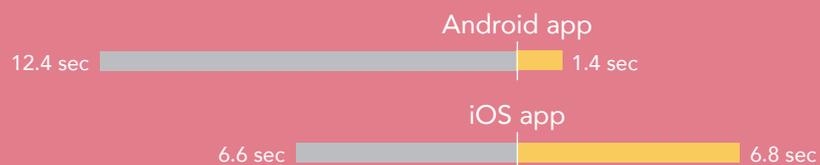
Preview a 25MB  
JPG in up to

**97%**  
**less time**  
with Gmail



Preview a 1.3MB  
XLSX in up to

**88%**  
**less time**  
with Gmail



■ Outlook ■ Gmail

## Conclusion: Gmail frees up more time

Cloud-based solutions like G Suite and Microsoft Office 365 can help your company be more productive, especially when the tools are speedy. Efficient exchanges of information keep team members and clients on the same page. But the longer it takes important materials to reach their destination, the more frustrating it can be for everyone.

In our hands-on testing with laptops and smartphones, sending and receiving files via email using Gmail and saving files to shared cloud resources using Google Drive took up to 85 percent less time than performing the same tasks with Microsoft tools. As our real-life scenarios show, the time savings really add up when you're talking about companies with offices around the world.

Want to try out the tests yourself? Follow the methodologies at the end of this report.

This is the fourth report in our five-part series that explores the performance of Microsoft Office 365 and G Suite when set up in the United States and accessed abroad from Paris. These scenarios show how the two suites perform for employees that travel or who work outside of their U.S. headquarters. Read the full series for a more complete picture of each cloud's performance for multinational companies.



### Additional reports in the "A cloud abroad in Paris" series:

[A comparison of Google Docs™ and Microsoft Word Online](#)

[A comparison of Google Hangouts™ and Skype™ for Business](#)

[A comparison of Google Drive, Microsoft OneDrive for Business, and SharePoint® Online](#)

[A comparison of Google Sites™ and Microsoft SharePoint Online](#)

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1 International Data Corporation (IDC); McKinsey Global Institute (MGI) analysis. <http://www.mckinsey.com/industries/high-tech/our-insights/the-social-economy>

On August 24, 2016, we finalized the hardware and software configurations we tested. Updates for current and recently released hardware and software appear often, so unavoidably these configurations may not represent the latest versions available when this report appears. For older systems, we chose configurations representative of typical purchases of those systems. We concluded hands-on testing on August 25, 2016.

On September 29, 2016, Google rebranded Google Apps for Work as "G Suite." We completed our testing prior to that rebranding.

## Appendix A – What we tested

The table below shows the system information for the mobile devices we tested.

System	Apple® iPhone® 6s Plus	Google Nexus™ 6P
<b>Processor</b>		
Vendor	Apple	Qualcomm®
Model number	A9 + M9 coprocessor	Snapdragon™ 810
Core frequency (GHz)	1.85	1.95 + 1.55
Number of cores	2	8 (4 + 4)
<b>Memory</b>		
Amount (GB)	2 (built-in onboard)	3 (built-in onboard)
Type	LPDDR4	LPDDR4
<b>Graphics</b>		
Vendor	Imagination Technologies®	Qualcomm
Model number	PowerVR® GT7600	Adreno™ 430
<b>Storage</b>		
Amount (GB)	64	64
Type	NAND Flash	NAND Flash
<b>Connectivity</b>		
Wireless internet	802.11ac (802.11a/b/g/n compatible)	802.11ac (802.11a/b/g/n compatible)
Cellular	LTE Advanced	LTE Advanced
Bluetooth	4.2	4.2
<b>Battery</b>		
Type	Lithium-polymer	Lithium-polymer
Size	Integrated	Integrated
Rated capacity (Wh)	10.45	13.11
<b>Display</b>		
Size	5.5"	5.7"
Type	LED-backlit widescreen Multi-Touch	AMOLED widescreen Multi-Touch
Resolution	1,080 x 1,920	1,440 x 2,560

System	Apple® iPhone® 6s Plus	Google Nexus™ 6P
<b>Camera</b>		
Front-facing (MP)	5 (720p FaceTime® HD)	8
Rear-facing (MP)	12 (iSight®)	12.3
<b>Operating system</b>		
Vendor	Apple	Google
Name	iOS	Android
Build number or version	9.3.2	6.0.1
<b>Dimensions</b>		
Height	6.23"	6.27"
Width	3.07"	3.06"
Depth	0.29"	0.28"
Weight (oz.)	6.77	6.27

The table below shows the system information for the laptops we tested.

System	Apple 13" MacBook Air® (Early 2015)	Lenovo® ThinkPad® X1 Carbon
<b>Processor</b>		
Vendor	Intel®	Intel
Model number	Core™ i5-5250U	Core i7-6600U
Core frequency (GHz)	1.6 (up to 2.7 Turbo Boost)	2.6 (up to 3.4 Turbo Boost)
Number of cores	2	2
Cache	3MB L3	4MB L3
<b>Memory</b>		
Amount (GB)	8 (built-in onboard)	8 (built-in onboard)
Type	LPDDR3	LPDDR3
Speed (MHz)	1,600	1,866
<b>Integrated graphics</b>		
Vendor	Intel	Intel
Model number	HD Graphics 6000	HD Graphics 520
<b>Storage</b>		
Amount (GB)	256	256
Type	PCIe-based flash	PCIe NVMe™ SSD

System	Apple 13" MacBook Air® (Early 2015)	Lenovo® ThinkPad® X1 Carbon
<b>Connectivity/expansion</b>		
Wireless internet	802.11ac (802.11a/b/g/n compatible)	802.11ac (802.11a/b/g/n compatible)
Bluetooth	4.0	4.1
USB	2 x 3.0	3 x 3.0
Thunderbolt	2 x 2	N/A
Video	N/A	1 x HDMI®, 1x Mini DisplayPort
<b>Battery</b>		
Type	Lithium-polymer	Lithium-polymer
Size	Integrated	4-cell
Rated capacity (Wh)	54	52
<b>Display</b>		
Size	13.3"	14"
Type	LED-backlit glossy widescreen display	LED IPS
Resolution	1,440 x 900	1,920 x 1,080
Touchscreen	No	No
<b>Operating system</b>		
Vendor	Apple	Microsoft
Name	OS X El Capitan	Windows 10 Pro
Build number or version	10.11.4	1511, OS Build 10586.318
<b>Camera</b>		
Front-facing	720p FaceTime HD	720p
<b>Dimensions</b>		
Height	0.11" to 0.6"	0.6"
Width	12.8"	13.1"
Depth	8.94"	9.00"
Weight (lb.)	2.96	2.58

# Appendix B – How we tested

## About our testing

### Network infrastructure

We used two of each device under test. We connected the two devices in each pair to separate wireless networks. We connected the devices to the 5GHz band of identical, 802.11ac-based TP-Link AC1750 wireless routers. We configured each router identically but set them to use different channels to minimize interference from nearby networks. We ran all tests on a 100Mbps down and 20Mbps up connection.

### Devices

- Lenovo ThinkPad X1 Carbon (Windows 10)
- Apple 13" MacBook Air (OS X El Capitan)
- Google Nexus 6P (Android 6.0.1)
- Apple iPhone 6s Plus (iOS 9.3)

### OS and browser versions

- OS X El Capitan
  - Chrome 52.0.2743.116
  - Safari 9.1.2
- Windows 10
  - Chrome 52.0.2743.116 m
  - Edge 38.14393.0.0
- Android 6.0.1
- iOS 9.3.4

### File corpus

We used the following files as attachments in all tests:

- SampleDoc.docx (1.3 MB)
- SamplePpt.pptx (4.4 MB)
- SampleXls.xlsx (1.3 MB)

## Running the laptop tests

### Recording the time to open cloud-hosted document from emailed share link in online editor

1. Open a browser window, and navigate to Gmail or Outlook Online.
2. Prepare the stopwatch, and navigate to the email containing the share link for the document under test.
3. Simultaneously start the stopwatch and click the share link inside to open the document in the online editor (Google Docs or Microsoft Word Online).
4. When the document has fully loaded, stop the stopwatch. In G Suite, this is when the document is completely loaded and editable. In the Office 365 Online apps, this is when the document loads and can be viewed, but is not editable.
5. Record the result.
6. For Word Online, reset the stopwatch.
7. Click the Edit link and simultaneously start the stopwatch and from the drop-down menu, select Edit in browser.
8. When the document has fully loaded and is editable, stop the stopwatch.
9. Record the result, and add it to the result recorded in step 7 for the total time.

## Recording the time to receive email

1. Open the appropriate email client or browser-based email client for the cloud storage solution under test on Laptop 1, and open the same client on Laptop 2.
2. Open a new email message:
  - In Gmail, click Compose.
  - In Outlook Online, click New.
3. Attach the appropriate file to the email:
  - In Gmail, click Attach files, navigate to and select the correct file, and click Open.
  - In Outlook Online, click Attach, navigate to and select the correct file, and click Open. Select Attach as a copy when prompted.
4. Provide the Laptop 2 user's email address in the To field, provide a non-empty subject line, and prepare the stopwatch.
5. Simultaneously click Send and start the stopwatch.
6. When the email appears in the inbox on Laptop 2, stop the stopwatch.
7. Record the result.

## Recording the time to save email attachment to cloud storage directory

1. Open the appropriate email client or browser-based email client for the cloud storage solution under test on Laptop 1, and open the same client on Laptop 2.
2. Open a new email message:
  - In Gmail, click Compose.
  - In Outlook Online, click New.
3. Attach the appropriate file to the email:
  - In Gmail, click Attach files, navigate to and select the correct file, and click Open.
  - In Outlook Online, click Attach, navigate to and select the correct file, and click Open. Select Attach as a copy when prompted.
4. Provide the Laptop 2 user's email address in the To field, and provide a non-empty subject line.
5. Press Send.
6. On Laptop 2, when the email appears in the inbox, open the email, and prepare the stopwatch.
7. Simultaneously start the stopwatch and save the attachment to the cloud storage solution under test:
  - In Gmail, hover over the attachment, and click Save to Drive, and start the stopwatch.
  - In Outlook Online, press the drop-down arrow on the attachment, and click Save to OneDrive - (Organization Name Here), and start the stopwatch.
8. When the file finishes saving, stop the stopwatch:
  - In Gmail, when the balloon that appears over the attachment says "Saved to Drive," stop the stopwatch.
  - In Outlook Online, when the status message on the attachment changes to a checkmark and "Saved to," stop the stopwatch.
9. Record the result.

## Recording the time to upload/send image attachment

1. Open the appropriate email client or browser-based email client under test on Laptop 1.
2. Open a new email message:
  - In Gmail, click Compose.
  - In Outlook Online, click New.
3. Provide the Laptop 2 user's email address in the To field, and provide a non-empty subject line.
4. Prepare the stopwatch, and time how long it takes to attach the appropriate file to the email:
  - In Gmail, click Attach files, navigate to and select the correct file, and simultaneously start the stopwatch and click Open.
  - In Outlook Online, click Attach, navigate to and select the correct file, and click Open. When prompted, select Attach as Copy and simultaneously start the stopwatch.
5. Use the following indicators to determine when the file under test has been uploaded successfully:
  - In Gmail, stop the stopwatch when the progress bar indicating upload progress for the attachment in the Compose screen fills and disappears.
  - In Outlook Online, stop the stopwatch when the spinning icon indicating the upload in progress for the attachment in the Compose screen disappears.
6. Record the result.

## Running the mobile device tests

### Previewing email attachment in mobile app

1. Prepare Smartphone 1, and ensure that the appropriate native email app (Gmail or Outlook) is the only application running in memory.
2. Open the corresponding email app on Smartphone 2, and prepare the email to send:
  - a. Tap the Compose icon to create a new email, and give it a subject.
  - b. Enter the email address associated with the G Suite or Office 365 account of the user on Smartphone 1.
  - c. Tap the attachment icon, and select a file of the appropriate size and file type.
3. Tap the send icon to send the email to Smartphone 1.
4. On Smartphone 1, open the email app under test.
5. Prepare the stopwatch and navigate to the email containing the attachment under test.
6. Simultaneously start the stopwatch and tap the attached file under test to preview it.
7. When the file fully loads on the preview screen, stop the stopwatch.
8. Record the result.
9. Delete the email, and close the app so it is no longer loaded in memory. This will ensure that the attached file is not cached for subsequent runs.

This project was commissioned by Google.



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