Migration to Exchange Online and Office 365: A Step-by-Step Guide

An Osterman Research White Paper

Published May 2016

datto

EXECUTIVE SUMMARY

The use of Office 365 across the globe is growing rapidly, driven by the intense sales focus of Microsoft and its business partners, along with a clear value proposition for organizations of all sizes. While the uptake of Exchange Online is leading the early growth charge, there are significant opportunities for organizations to leverage the many other components of Office 365 to re-invent productivity. In this white paper, we present a step-by-step guide for migrating to Exchange Online and the other capabilities available in Office 365.

KEY TAKEAWAYS

- Growth of Office 365 is continuing apace: as shown in Figure 1, among organizations that have made or will make the decision to migrate to Office 365, 75% of users will have access to an Office 365 account by 2017[1].

Figure 1
Percentage of Users Served by Email Platform
Among Organizations That Will Deploy Office 365 by 2017
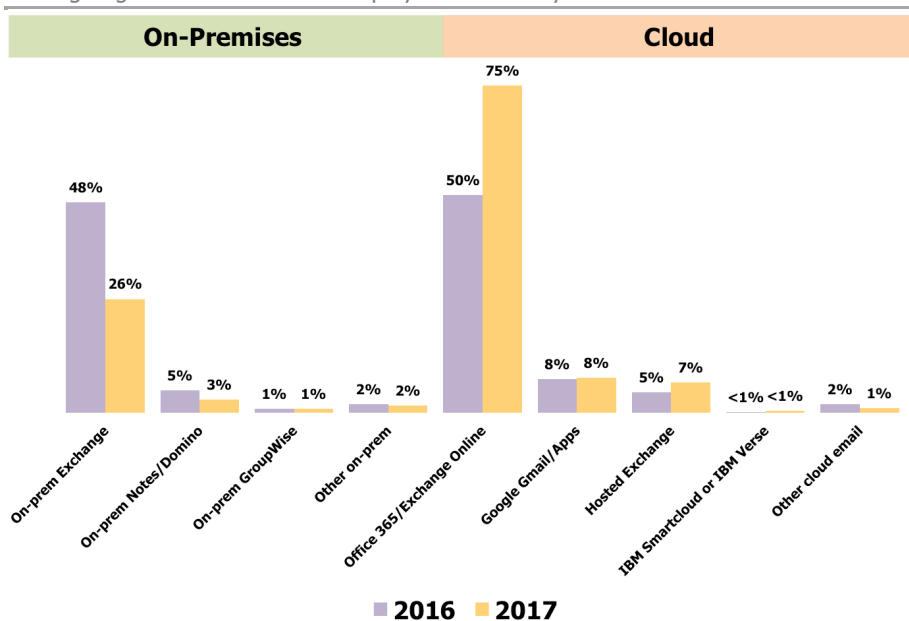
Source: Osterman Research, Inc.

- Office 365 offers a significant array of communication and collaboration services for organizations of all sizes. Once a firm has migrated to Office 365, it can take advantage of the frequent updates to the component services in Office 365, without the cost and complexity of managing on-premises infrastructure.

- Migrating to Office 365 is a substantial undertaking for most firms, involving months of pre-migration learning, planning the roadmap, mitigating issues in current on-premises infrastructure, and the execution of the actual migration activities. For IT administrators who have not been involved in a previous migration to Office 365, there is a steep learning curve.

- Microsoft offers technical capabilities to enable the migration to Exchange Online, but next to nothing for migrating to SharePoint Online and OneDrive for Business. Even its migration tools for Exchange Online are basic, have onerous

For IT administrators who have not been involved in a previous migration to Office 365, there is a steep learning curve.

---

[1] Some users have access to multiple email accounts, resulting in totals exceeding 100%.

pre-requisites, and require an uncommon depth of technical ability. Organizations migrating to Office 365 should evaluate the migration tools available from third-party vendors to streamline, simplify, and properly structure their migration activities across Exchange, SharePoint, and OneDrive.

• Every organization operating under compliance requirements or who hold current email archives that need to be migrated without breaching archiving integrity should definitely get expert assistance from third-party migration vendors. The risk of being out of compliance, or breaking chain of custody in email archives is too high to do otherwise.
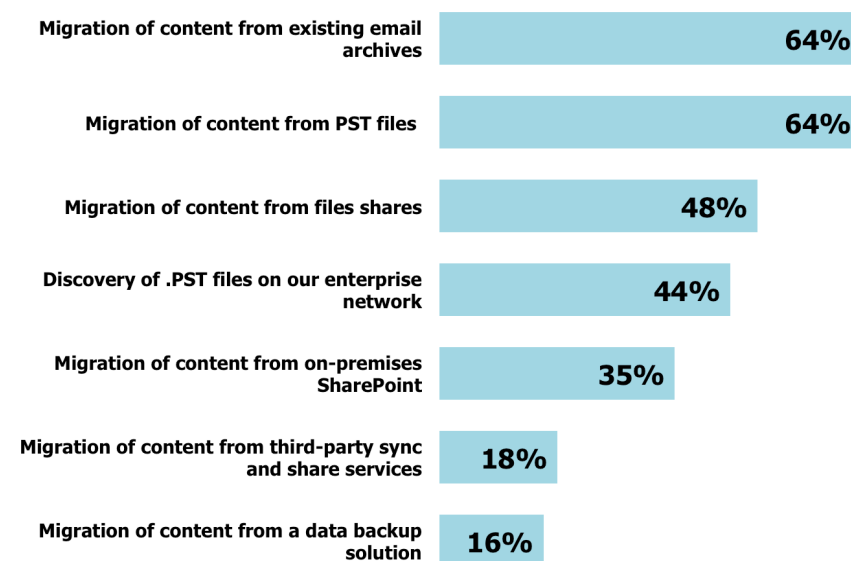
ABOUT THIS WHITE PAPER
This white paper was sponsored by Datto - information about the company is included at the end of this paper.

A STEP-BY-STEP GUIDE TO THE MIGRATION
Organizations that have migrated to Office 365 have implemented various types of solutions and capabilities to support their use of the platform, as shown in Figure 2.

Figure 2
Solutions and Capabilities Implemented to Support Migration to Office 365
Among Organizations That Will Deploy Office 365 by 2017

Migration of content from existing email archives	64%
Migration of content from PST files	64%
Migration of content from files shares	48%
Discovery of .PST files on our enterprise network	44%
Migration of content from on-premises SharePoint	35%
Migration of content from third-party sync and share services	18%
Migration of content from a data backup solution	16%

Source: Osterman Research, Inc.

STEP 1: FACE THE REALITIES OF MIGRATING TO OFFICE 365
Any organization with established business processes, current on-premises infrastructure, and historical data under management faces a significant planning exercise in evaluating the shift to Office 365, along with a set of discrete tasks in actually doing so. There are numerous critical decisions to make while planning the shift to Office 365—including how to achieve value from doing so, the approach to take, whether to involve an external consultancy, and the selection of third-party migration tools.

Any organization with established business processes, current on-premises infrastructure, and historical data under management faces a significant planning exercise in evaluating the shift to Office 365.

The migration process itself requires the appropriate mindset, approach, and a set of technical skills, tools, and experiences that are not always readily available among an organization's current IT professionals—or as some early adopters have discovered, even among external IT consultancies. Getting it right is important: if the migration process doesn't work perfectly, staff won't have the ability to read and respond to email, schedule meetings and book resources, and assistants won't be able to manage their bosses calendar. Just thinking of Exchange at the moment, messaging is a mission-critical system for almost all organizations—so getting a migration right is critical.

STEP 2: MAKE FOR HOW YOU WILL USE OFFICE 365

Office 365 provides an array of capabilities for enabling communication, collaboration, and compliance for organizations. An early task to complete in evaluating the shift to Office 365 is how your organization will make use of the capabilities on offer. Aspects include:

- Whether to cherry-pick specific capabilities from Office 365 for use, such as Exchange Online or Exchange Online Archiving, or alternatively use most or all of the cloud services on offer.

- Deciding whether to embrace a hybrid approach to specific capabilities, where some services are provided from Office 365 and complementary services are delivered through on-premises servers (for example, some Exchange mailboxes in Office 365 and others retained on-premises). A hybrid approach can be a short-term route for migrating to Office 365, or a long-term strategy for optimizing IT service delivery.

- Once staff have new capabilities available from Office 365, how will you lead staff to the effective use of these new tools in their work? Getting business value from Office 365 requires creating new approaches to business processes enabled by new tools that streamline current processes by removing inefficiencies, creating innovation, or introducing greater effectiveness.

In addition to deciding how to use Office 365, it is essential to know if there are other competing or complementary IT initiatives being undertaken at your organization that might impact the scope or timeline for a migration to Office 365, such as a refresh of end-user devices. Current litigation or in-progress evaluations of possible acquisition targets will also directly impact on the ability to move particular mailboxes to Exchange Online and your ability to migrate email archives.

STEP 3: PROCURE THE OFFICE 365 PLAN THAT MAKES SENSE FOR YOUR ORGANIZATION

Microsoft offers a number of plans for Office 365, with increasing levels of capability and service coverage. An organization that wants to use a hybrid configuration between on-premises servers and Office 365 must select a plan that supports Azure Active Directory to enable administration tasks and seamless identity management between the two environments.

Other considerations in selecting a plan includes:

- Organizations with a global footprint or strict data sovereignty requirements in some geographies need to decide between a single Office 365 tenant or the use of multiple tenants. While an organization can set up multiple cooperative tenants to comply with data sovereignty and address other practical issues, a multi-tenant approach comes with a range of complexities.

- Organizations with fluctuating staff numbers over the year could choose to forego the slightly cheaper plans that require an annual commitment and instead sign up for a plan that only requires a monthly commitment. This allows an organization to optimize its cost commitment to Microsoft, but does require

The migration process itself requires the appropriate mindset, approach, and a set of technical skills, tools, and experiences that are not always readily available among an organization's current IT professionals.

active management to achieve.

- While most plans include the right to install the latest version of Microsoft Office applications on computers and mobile devices, some Office applications are excluded from this right. Visio Pro, Project Pro, and Power BI Pro for Office 365 are available at an additional cost over and above the base plan price.

STEP 4: COMPLETE PRE-MIGRATION CHECKS AND DEVELOP A MIGRATION PLAN

Delivering a seamless migration to Office 365 is pretty straight-forward once all the thinking work is done. As Microsoft says, most organizations will have to spend a lot more time planning their migration than actually putting it into practice. Here are the tasks to work through in checking your current environment and developing a plan for migrating to Office 365.

- **Task 4.1. Understand the Limitations in Office 365**
  Every system has design limits, and Office 365 is no exception. Certain limitations may cause issues when migrating to Office 365, while others create ongoing issues after doing so. During migration examples include migration throttling, maximum attachment sizes in Exchange Online, the default and maximum retention period for deleted items in Exchange, the length of file names for upload to SharePoint Online or OneDrive for Business, blocked file types, and unsupported characters in file names. Most of these issues can be mitigated one way or another, but they have to be identified first. It is also essential to ensure that all data is backed up fully prior to the migration, and that backup capabilities are in place as the initial set of content enters Office 365.

  Post-migration issues can include Microsoft's approach to anti-malware and anti-phishing attacks, compliance and e-discovery, and the inclusion of archived email in the same system as day-to-day transactional email. Many of the issues falling in this category can likewise be mitigated, usually by embracing third-party tools which give organizations greater design control.

- **Task 4.2. Check Bandwidth Availability**
  Migrating to Office 365 is a bandwidth-intensive task, as hundreds of gigabytes or terabytes of data are shifted from on-premises servers to Office 365. Check that your organization has sufficient bandwidth available for the migration, and explore alternatives for moving current and historical data to Office 365 without using an Internet connection. For example, Microsoft offers the option of delivering data on hard disks directly to Microsoft for upload into the customer's account at an Office 365 data center, and some third-party migration tools support faster upload to Office 365 by moving data into Azure first.

  Note that Microsoft has implemented multiple data throttling approaches that limit the amount of data an organization can upload each day, so a bigger pipe is unlikely to unilaterally solve the problem.

- **Task 4.3. Review Bandwidth Design**
  Remote offices with low bandwidth connections can cause problems in migrating to Office 365, due to the long time it takes to move data across the network links. Understand what is in place currently across your organization, and determine whether a higher bandwidth connection is required during and after the migration for such remote offices.

  Bandwidth design for your entire organization is worth revisiting as well, in light of the pending migration to Office 365. If your organization does not currently have redundant network links, it may be worth introducing those since you will be relying on a cloud service for essential day-to-day systems.

Remote offices with low bandwidth connections can cause problems in migrating to Office 365.

- **Task 4.4. Assess Active Directory Health**
  Hybrid approaches to Office 365 require flawless interaction between your Active Directory and Azure Active Directory. Assess the current health of your Active Directory setup, and resolve any issues. Things to look for include:

  - The presence of multiple forests in Active Directory. While multiple forests can be synced with Azure AD, it is a complex process. The recommended approach is to have a clean OU (organization unit) structure so you can sync only specific OUs.

  - The exclusion of admin and service accounts for on-premises servers from the OU structure that is synced to Azure AD. Don't sync AD objects to Azure AD that are not necessary for Office 365 to function.

  - An established process for provisioning and de-provisioning users in Active Directory, to add new employees, update employees when changing jobs, and removing employees who are departing the organization. Any sloppiness in these processes will result in added costs, security vulnerabilities, and potential data breaches.

- **Task 4.5. Assess Exchange Server Health**
  Before migrating from Exchange to Exchange Online, check the health of your current Exchange Server infrastructure. Any configuration problems, corruption, or other sub-performant aspects will either degrade your migration experience or be amplified after migrating to Exchange Online. Some specific aspects to note:

  - If you are migrating from Exchange Server 2003, note there are some specific implications during the migration process, such as mailboxes not being available during the migration, and that failed migrations have to be re-initiated from the beginning; they cannot be restarted from where they failed.

  - Ensure your current hardware is up to the migration challenge. While Microsoft recommends the use of enterprise-class physical hardware for most organizations, small firms can probably get away with virtual machines.

  Microsoft's Exchange Server Deployment Assistant is a good place to start. It analyzes your current Exchange deployment using the latest guidance and pre-migration requirements from Microsoft, creating a customized plan for your organization.

  For organizations shifting from a non-Exchange environment—such as IBM Notes/Domino, Novell GroupWise, or Zimbra—it is likewise important to ensure your current system has sufficient integrity to handle the demands of the pending migration.

- **Task 4.6. Assess SharePoint Server Health**
  SharePoint is a comprehensive and complex product, and organizations who have taken advantage of its custom development capabilities are highly likely to need to re-think their approach to SharePoint when embracing SharePoint Online. In assessing your current SharePoint environment, consider:

  - The use of customizations, third-party Web parts, and other design approaches that work on-premises but are unsupported on SharePoint Online.

  - The effectiveness of your content structures in SharePoint. Will you just copy across your current structure and approach, or use the opportunity of shifting to Office 365 to restructure what SharePoint has become?

If you are migrating from Exchange Server 2003, note there are some specific implications during the migration process.

  ○ The present and future value of content in SharePoint. Content that lacks future value should be deleted or archived (depending on your compliance mandates) instead of being shifted across to SharePoint Online. Clearly making decisions of this nature will need to be done in conjunction with content owners.

- **Task 4.7. Catalogue Dependencies with Other Applications**
  Find out which applications and systems rely on or work alongside your Exchange environment. If you are going to change your approach to Exchange by embracing Exchange Online, you will need to undertake remedial work to re-connect other systems. For example:

  ○ Scanners and multi-function machines send scanned documents to staff. Develop a plan for pointing these devices at Exchange Online after the migration.

  ○ On-premises email archiving systems that work with your Exchange deployment may need to be updated or replaced for Exchange Online.

  ○ Organizations shifting from IBM Notes/Domino for email are likely to have mail-enabled and workflow-enabled Notes applications. Figure out how you will support this mail flow after migrating to Exchange and Outlook.

  ○ CRM systems integrate with Outlook to support customer tracking and interaction. Evaluate how your current CRM toolset will integrate after the migration.

- **Task 4.8. Availability of Skilled IT staff**
  Evaluate the skills of current IT staff to execute the migration from on-premises infrastructure to cloud services, including their ability to backup and archive all relevant content. Some organizations have IT staff who have been doing email migrations for a couple of decades, and their battle-won expertise can often carry across to an Office 365 migration. Other organizations no longer have these resources readily available, and will need to engage the technical assistance of an external IT consultancy. Note that in selecting an external IT consultancy, ensure they have specific expertise in migrations featuring the same setup and constraints in place at your firm; don't blindly choose your current IT consultancy because they may lack the specific expertise required. It is essential to ensure that backup and archiving routines not be interrupted during the migration given the essential nature of both activities.

  Shifting to cloud services does not render IT staff irrelevant and unnecessary—it just changes the type of job tasks they perform. Consider the retraining required to ensure current staff can manage new cloud services that are entirely delivered from Office 365, or in conjunction with on-premises infrastructure in a hybrid deployment. New administration and management tools frequently streamline the execution of these tasks over time too, and these are worthy of evaluation.

  Selecting a hybrid approach creates its own set of challenges, which must be actively managed to avoid downstream troubles. For example, there are specific versioning requirements for Exchange Server on-premises in order to work in a hybrid configuration with Exchange Online. Ensure the processes are established to test, deploy, and manage the ongoing update stream.

- **Task 4.9. Assess Level of Staff Knowledge on Office 365**
  Office 365 makes many new capabilities available to staff through the home page and app launcher. If staff will be expected to use any of the new capabilities in their work, select the training resources and adoption strategies you will leverage to lead staff to effective use. Any decisions in this task should reference the plans you made in Step 2 above.

Evaluate the skills of current IT staff to execute the migration from on-premises infrastructure to cloud services.

- **Task 4.10. Review Compliance Requirements**
  Review current compliance requirements and evaluate how you will achieve these in Office 365. Factors to review—in collaboration with compliance officers and your legal team—include:

  o The presence of current email archives, and whether to shift them into Office 365, move them to a separate new archiving service, or leave them in their current state. If moving them somewhere else is deemed the best approach, you need to plan how to migrate without breaking chain-of-custody, which is not a trivial issue.

  o The existence of encrypted customer or sensitive data, and whether this needs to be moved to Office 365. If encrypted data is moved, how will you do this without breaking the encryption safeguards?

  o The requirement for data to be physically stored within specific geographical areas, in line with data sovereignty legislation. This may dictate where to establish a single tenant, or push you in the direction of multiple cooperating tenants.

  Organizations without compliance requirements can move faster and more simply to Office 365. Those with compliance mandates need a rock-solid approach to ensure their organization isn't opened to legal risks and financial fallout.

- **Task 4.11. Review Data Privacy Requirements**
  Check the data privacy requirements for data that would be stored in Office 365. Evaluate how Office 365 handles data that would be subject to privacy requirements (such as social security numbers and credit card numbers), and if the automatic encryption capabilities in Office 365 will be sufficient for your requirements. If not, a third-party add-on encryption service may be required.

  Some organizations deliberately select the location of their Office 365 tenant to be outside of the United States to prevent US government access to cloud-based data under anti-terrorism legislation.

- **Task 4.12. Assess Firewall Architecture**
  Review your current firewall architecture, as Office 365 requires certain firewall rules to be established. Organizations with multiple independent firewalls across their global network will require a method of coordinating rule additions, changes, and deletions over time.

- **Task 4.13. Develop a Migration Plan**
  Based on a solid understanding of the current state of your IT infrastructure, the business goals being pursued, and the way in which Office 365 will be leveraged to enable this pursuit, develop a migration plan. Such a plan should include:

  o The phasing of the migration, particularly the order in which departments and divisions will migrate to Office 365. Phasing will need to be coordinated for some users in order to ensure uninterrupted delegate access for mailboxes and calendars. This planning for coexistence, such as planning for uninterrupted access to the directory/Global Address List (GAL) and free/busy lookups, will be particularly important for customers coming from Notes/Domino.

  o The internal IT staff and any external IT consultants who will be carrying out the migration duties.

  o The timeframes for consulting with business and content owners over content deletion, archiving, and migration.

Check the data privacy requirements for data that would be stored in Office 365.
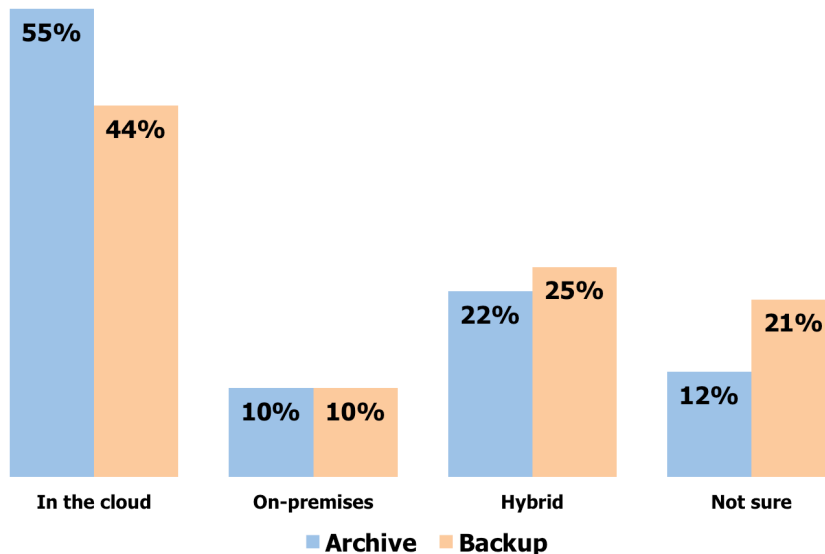
- o The products and capabilities in Office 365 that will be made available to staff over set timeframes, such as Exchange Online, SharePoint Online, Skype for Business, and more. Many organizations start with Exchange Online, and once that is rock solid, introduce additional capabilities.

- o How you will respond to a legal discovery request during the migration, should that happen, particularly if archived data is being migrated to a new location.

- **Task 4.14. Develop a Backup and Recovery Plan**
  Office 365 offers only rudimentary backup and recovery capabilities for customer use, such as the ability to retrieve a deleted mailbox item for up to 14 days through the Recoverable Items folder (this default can be increased to 30 days), and a way to retrieve a deleted user mailbox within 30 days of deletion. What it doesn't offer, however, is the more traditional concept of backing up servers and data at a point in time, to enable recovery or roll-back under disaster scenarios, the ability to recover individual files, or data beyond the recoverable windows. Various third-party vendors offer backup and recovery services that greatly extend what's on offer from Microsoft, adding an essential level for the management of corporate data.

  As shown in Figure 3, organizations that have adopted Office 365 or plan to do so have already decided on their archiving plans for eDiscovery and legal purposes, as well as their Office 365 strategies.

Figure 3
Plans for Archiving and Backup Capabilities
Among Organizations That Will Deploy Office 365 by 2017

Source: Osterman Research, Inc.

Various third-party vendors offer services for mitigating the impact of an Office 365 outage, which act as a type of insurance policy.

- **Task 4.15. Develop a Disaster Recovery/Business Continuity plan**
  Office 365 is generally a highly-reliable service, but it has experienced several multi-hour or day-length outages in recent years. While these make international headlines, the more immediate issue is that staff lose access to essential services for carrying out their work. Various third-party vendors offer services for mitigating the impact of an Office 365 outage, which act as a type of insurance policy. Evaluate the potential risks of losing access to Office 365 for your organization and assess how to mitigate these to ensure business continuity.

STEP 5: MIGRATE TO OFFICE 365

Migrating to Office 365 is usually done across several phases, with organizations frequently shifting user mailboxes to Exchange Online first, then migrating other aspects of Exchange, and finally looking at the other capabilities on offer.

- **Task 5.1. Migrating to Exchange Online**

    Migrating to Exchange Online is an involved process, requiring a set of coordinated activities over several months or longer—depending on the size of your organization, and the volume of mailboxes and data to migrate. You will need to follow the steps below:

    o **Verify Connectivity to Exchange**

       Verify connectivity from Exchange Online to your on-premises Exchange infrastructure. Microsoft offers a tool to ensure connectivity is enabled and configured correctly.

    o **Pilot Test Your Migration**

       Pilot test the efficacy of your preferred migration option, first using test accounts and mailboxes, and then migrating a small proportion of real user mailboxes. Once some real user mailboxes have been migrated to Exchange Online, it is good to take a standing brief for a couple of weeks to see if any issues arise. If so, you can mitigate any issues on a small number of mailboxes for future migrations, instead of trying to rein in the issues across a much larger number of mailboxes. Third-party backup tools can assist with a pilot migration, such as implementing a third-party backup tool in-between Sync Active Directory and Assign Licenses and Migrate Active User Mailboxes.

    o **Select the Migration Option**

       Select the migration option that makes most sense for your organization. Options from Microsoft include IMAP migration (for moving only messaging data from IMAP servers to Exchange Online), Cutover Migration (for small organizations who want to migrate all at once in one fell swoop to Exchange Online), and two migration options that support hybrid approaches. The hybrid approaches enable coexistence between on-premises Exchange and Exchange Online, either for the short-term over the duration of the migration, or as a long term strategy to optimize between the two approaches of providing Exchange services to organizations. Both of the hybrid approaches have very specific pre-requisites involving the integration of Active Directory on-premises with Azure AD. Various third-party vendors offer migration toolsets to streamline the migration to Exchange Online, if Microsoft's tools are insufficient or too complicated to use.

    o **Sync Active Directory and Assign Licenses**

       For organizations taking a hybrid approach, the synchronization of Active Directory with Azure Active Directory is required because it creates the users in Office 365. Once they have been created, assign Office 365 licenses— such as the right to Exchange Online, SharePoint Online, and install Office 2016 on computers and devices. It is useful to implement third-party backup capabilities prior to moving data.

    o **Migrate Active User Mailboxes**

       Start migrating active user mailboxes to Office 365, in light of available bandwidth and the data throttling Microsoft applies to migration activities. To stay within the limits imposed by Microsoft, many customers schedule a batch of a couple of hundred mailboxes to migrate each night. Once an active user mailbox has been migrated, update their Exchange settings so Outlook will automatically discover the new cloud-based mailbox. Migrating mailboxes at this rate will take from several days to a couple of months, depending on the number of mailboxes to migrate.

Select the migration option that makes most sense for your organization.

o **Address Unused Mailboxes**
Many organizations have unused mailboxes on Exchange Server that still contain messaging data, but for whom the user has long since departed. Exchange Online has the concept of an inactive mailbox to support this situation. If the mailbox needs to be moved for legal or compliance reasons, create a user account for the mailbox and attach the two, leave the account to sync to Azure AD, assign an Exchange Online license, migrate the unused mailbox to Exchange Online, put the mailbox on litigation or in-place legal hold, and then delete the user account. The user account will be deleted, the license freed up for further use (subject to some time constraints), and the mailbox data held until the litigation or legal hold is removed.

Recommendations to manage properly within the context of Active Exchange mailboxes and Exchange Personal Archives:

o **Migrate Public Folders**
Microsoft supports the migration of public folders from Exchange 2007 and 2010, with specific requirements on the level of service packs and cumulative updates applied to the on-premises servers. Using Microsoft's approach to public folder migration requires the use of PowerShell, has limitations on the maximum size of a migrated public folder, the maximum number of public folder mailboxes on Office 365, and more. Organizations falling outside of these prerequisites should evaluate the use of third-party tools to streamline and simplify their migration.

o **Migrate PST Files**
Organizations with PST files will need to determine what information should be migrated into Exchange Online. This requires an analysis of content inside PST files to identify data that may be subject to compliance requirements, a task that legal and compliance teams will need to be involved with. Microsoft offers an unsupported tool for migrating PST files to Office 365, but it requires a lot of manual effort. Third-party vendors offer tools that greatly streamline and simply the processing, analysis, and migration of appropriate data into Exchange Online or an archive.

o **Migrate Email Archives**
Migrating email archives is the most challenging, difficult, and risky part of moving to Exchange Online. If you decide to move your email archives from where they current located, you need to ensure they are moved without breaking chain of custody—in other words, without compromising data integrity that could see your organization subject to negative legal repercussions. Email archives can represent a much larger amount of data than the email in current day-to-day Exchange mailboxes, and managing the transference of this data volume has to be incorporated into the overall plan so as not to avoid migration delays. During migration, be aware of mailbox size limits in Exchange Online, and ensure the archived data is migrated to the user's archive not their mailbox.

• Issues surrounding "stubs" – be careful to manage the stubs with "rehydration" to avoid unhappy end users (broken links).

• Journal data – if it exists, important considerations to manage journal data within the context of new Microsoft rules and remain in compliance with regulations for record keeping.

• Legal hold data – if it exists important considerations to manage properly and avoid legal spoliation fines.

• **Task 5.2. Migrating to SharePoint Online**
While Microsoft provides some tools for migrating to Exchange Online, it doesn't offer any valid approaches for migrating from SharePoint Server to SharePoint

Organizations with PST files will need to determine what information should be migrated into Exchange Online.

Online. There are a couple of manual ways that can be used for some aspects (moving documents into document libraries, usually without their associated metadata), but nothing intelligent is on offer. The following steps are involved:

o **Understand the Limitations**
SharePoint Online is not the same as SharePoint Server, and many of the design and customization options available for SharePoint Server are not available for SharePoint Online. Among other checks, you will need to:

  ▪ Examine the customizations and any custom code applied to SharePoint Server internally, and see if they can be rolled across to SharePoint Online. If not, can they be implemented a different way?

  ▪ Review the Web parts you are using with SharePoint Server, and check if they will work with SharePoint Online.

  ▪ Check the length of file names, and if the overall URL length for referencing a document fits within Microsoft's recommendation of 256 characters. Remember to include any folder names in your calculations. If they are too long, can they be shortened?

  ▪ Do file names or folders include any disallowed or blocked characters, or have lots of spaces that take up multiple characters once encoded in the resultant URL string? If so, can these spaces be eliminated?

  ▪ Count the number of files that will be moved to SharePoint Online, and how these are structured into document libraries. SharePoint has limitations on the total number of files that can be displayed in a document library view. If your current document structure exceeds these limits, you will need to restructure your document libraries and views to stay within what's possible.

  ▪ Determine if you have extra-large files, and whether you will still store these in SharePoint Online.

  ▪ Check if the total data size you need to move to SharePoint fits within your standard allocation, or if you need to purchase additional storage.

o **Archive or Delete Unnecessary Data**
Organizations that have been using SharePoint for some years are likely to have accumulated a lot of documents and other content. Instead of migrating all content to SharePoint Online, undertake a content audit to review content currency and future value. If you don't need it going forward, delete whatever you can without falling afoul of compliance regulations, and archive everything else.

o **Get Single Sign-On Working**
If you have retained Active Directory on-premises and are using Office 365 in a hybrid configuration, you should already have single sign-on working. If not, get that working now.

o **Decide On SharePoint Online Only or a Hybrid SharePoint Setup**
Like Exchange, hybrid configurations are supported between SharePoint Server and SharePoint Online. This allows, for example, organizations to keep highly confidential sites and documents under their direct control in SharePoint Server on-premises, while leveraging SharePoint Online for the intranet, general team collaboration sites, and external collaboration experiences. Microsoft offers two hybrid search designs in SharePoint to provide integrated search results across content stored in both SharePoint Server and SharePoint Online.

SharePoint Online is not the same as SharePoint Server, and many of the design and customization options available for SharePoint Server are not available for SharePoint Online.

o **Migrate Site Collections, Sites, Libraries, and More**
Migrate the underlying building blocks of SharePoint to SharePoint Online—such as site collections, sites, libraries, and lists. Third-party migration tools enable you to lift and shift from SharePoint Server to SharePoint Online, while maintaining correct metadata and user privileges, and either keeping the current hierarchical structures or re-arranging such things during the migration. Without migration tools, moving to SharePoint Online is a manual process of recreating new site collections, sites, libraries and lists. Documents can be moved to SharePoint Online using drag-and-drop in Windows Explorer, but this does not maintain document metadata (who created it, who edited it last, when it was created, etc.). Metadata about documents contains important signals about importance, so drag-and-drop should only be used for low value documents. Any document that's important to your firm should be migrated in such a way as to ensure metadata fidelity.

- **Task 5.3. Migrating to OneDrive for Business**
OneDrive for Business is the new home in Office 365 for personal work files and documents, providing employees with a cloud storage solution that can synchronize to their devices of choice, while giving the organization administrative oversight of these personal work files. Documents stored on file shares, corporate desktop and laptop computers, and other devices need to be migrated from their current location into OneDrive for Business or another new location in Office 365. The migration steps involved are:

o **Delete or Archive What Doesn't Need to Be Migrated**
Documents that have no future value or are not subject to compliance regulations should be deleted or archived, instead of being migrated to Office 365.

o **Drag-and-Drop into OneDrive for Business**
After installing the synchronization client for OneDrive for Business, users should drag-and-drop the documents they own that are related to their work but not associated with a wider business function into OneDrive for Business. Users can use the OneDrive for Business sync client to upload the folders and documents they create to Office 365, making these available for personal use across devices and for sharing with other internal and external people in a lightweight collaborative situation.

o **Migrate into SharePoint Online**
Many of the documents on a file share or computer hard drive should be put into a document library in a SharePoint Online site, not in an individual's OneDrive for Business folder. Documents related to a team project, department, initiative, or any other ongoing collaborative activity should be moved to the correct place in SharePoint Online. This restructuring of content from years or decades of working with a file share or local storage will be a significant undertaking for most organizations.

STEP 6: DRIVE EFFECTIVE USE AND ACHIEVE BUSINESS VALUE

Once you have migrated to Office 365, the ongoing challenge is to drive effective use and achieve business value through incorporating appropriate Office 365 capabilities into day-to-day work. An exhaustive treatment of driving effective use and achieving business value is beyond the scope of this step-by-step paper, but key aspects include:

- **Gaining Active Senior Executive Support**
Senior executives should be making use of appropriate Office 365 capabilities in their work, including sharing documents, managing executive meetings, and providing updates on organizational performance and direction through blogging

Once you have migrated to Office 365, the ongoing challenge is to drive effective use and achieve business value through incorporating appropriate Office 365 capabilities into day-to-day work.

or video briefings (using Office 365 Video). Provide mentoring to executives to help them through the transition to Office 365, as they will set a vital precedent for staff across the firm to do likewise.

- **Developing Departmental Champions**
  Identify people across your organization who can become a local champion for the use of Office 365 in departmental activities. Provide special training opportunities for them to explore the possibilities with Office 365, as well as support for bringing new work activities to life in Office 365.

- **Providing User Training**
  Some organizations find their users do not need any training to take advantage of Office 365, and that is likely to be true when users have previously experienced similar systems at other organizations. However, if that is not true of your organization, then some user training to explain why Office 365 is being used and how it is best used by individuals and teams across your firm will go a long way to aligning usage with intent.

- **Helping Users Overcome Problems**
  Users will face problems in using Office 365, and will need help in addressing these in a timely manner. Whether it is getting Outlook to connect to Exchange Online, troubleshooting a synchronization problem in OneDrive for Business, or identifying when to use OneDrive for Business versus a SharePoint team site, left unaddressed these questions will derail the effectiveness of your deployment. Provide appropriate help channels to mitigate this risk.
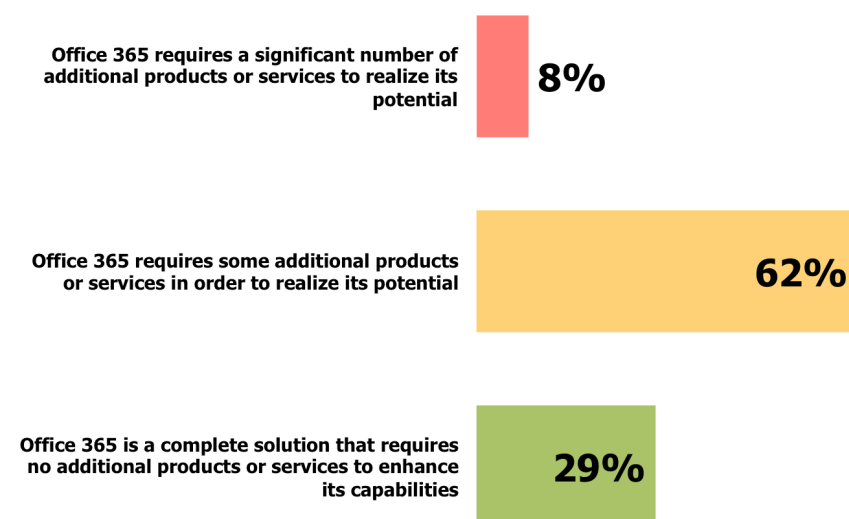
- **Retiring Outdated Equipment**
  In moving to Office 365 it is likely you now have excess and redundant servers on hand. Ensure they are properly decommissioned so you can cease future licensing payments.

THIRD-PARTY PRODUCTS AND SERVICES FOR MIGRATING TO AND MANAGING OFFICE 365

Office 365 is a strong product offering from Microsoft, and it benefits from a rich ecosystem of third-party add-on tools that simplify migration, extend use cases, and streamline administration tasks. For many IT administrators, this will be their first migration to Office 365, and using select third-party tools allows them to capitalize on the thousands of hours of experiences that other customers have already gone through—reaping the benefits faster, avoiding the pitfalls, and getting to value with minimum risk. Note that many IT consultancies that specialize in migrating to Office 365 have already invested in third-party tools to enable their work. Our survey revealed that most current or soon-to-be Office 365-enabled organizations believe they will require the use of third-party solutions to supplement Office 365, as shown in Figure 4.

In moving to Office 365 it is likely you now have excess and redundant servers on hand. Ensure they are properly decommissioned so you can cease future licensing payments.

Figure 4
Views on the Need for Third-Party Solution in Office 365
Among Organizations That Will Deploy Office 365 by 2017

Office 365 requires a significant number of additional products or services to realize its potential	**8%**
Office 365 requires some additional products or services in order to realize its potential	**62%**
Office 365 is a complete solution that requires no additional products or services to enhance its capabilities	**29%**

Source: Osterman Research, Inc.

Firms embracing Office 365 should evaluate third-party tools that can improve their use of Office 365. Key groupings of third-party tools, some of which are offered by the sponsors of this white paper, include:

- **Pre-Identification of Problems**
  Tools that check your current environment for the presence or absence of things that will cause issues during the migration. These include metadata consistency, incorrect user names, permissions that have been incorrectly assigned, users who have left the firm who still have access to corporate resources, incompatibilities with other software, and disallowed file types, names, or sizes.

- **Simplify Migration Activities**
  Tools that streamline the process of migrating from current on-premises servers to Office 365 services. For example, providing one-hop migration from a legacy Exchange Server environment to Exchange Online, without having to upgrade to a later version of Exchange Server first. Similarly, the ability to migrate SharePoint and other content sources to SharePoint Online or OneDrive for Business, while maintaining full metadata integrity. Some tools support the re-arranging of content structures during the migration process, scheduling migration activities to optimize available bandwidth, and automating staff communications about pending migration activities.

- **Adding Security**
  Various tools add additional layers of security to Office 365, or deepen the capabilities already on offer. Examples include a second layer of defense for malware, phishing, and spam, in addition to what's on offer with Exchange Online Protection. Another example is more comprehensive data loss protection that addresses Office 365 directly plus other non-Microsoft services in use at the organization. Third-party encryption capabilities can also provide important benefits to bolster the security available in Office 365. Finally, some tools report on security issues with orphaned content and ex-employees who still have access to Office 365.

Various tools add additional layers of security to Office 365, or deepen the capabilities already on offer.

- **Address Archiving Challenges**
  Tools that allow organizations to move with integrity from a current archiving system to Office 365 (or somewhere else), with full chain of custody ensured and compliance mandates continuing to be met. Messages that have been archived can be reconnected to the original mailbox, so users have seamless access to their archived messages after the migration to Office 365. Other tools add archiving capabilities to services like SharePoint Online and Yammer, which do not have native archiving in Office 365.

- **Address Compliance Requirements**
  Tools that improve the compliance capabilities in Office 365, by strengthening encryption, extending data loss protection, and improving policy-based archiving of content across Office 365. As one example, the use of third-party encryption can make data more secure by encrypting data before it reaches Microsoft's data centers. In the event that one or more Microsoft data centers is breached, or if Microsoft is subpoenaed by a government, customer data will still be protected.

- **Improve Backup and Reliability**
  Tools that enable an organization to backup content in Office 365 outside of Office 365, either using on-premises storage or a different cloud storage solution. Other tools ensure service reliability during outages or interruptions.

- **Streamline Administration**
  Tools to streamline ongoing IT administration of hybrid deployments and Office 365 services. Examples include content restructuring in SharePoint Online, analyzing license usage, providing a single administration console that hides the complexity of the multiple administration consoles in Office 365, and managing the interaction between Active Directory and Azure AD.

- **Assist with Training and Adoption**
  Tools that assist with training and adoption activities, such as video-based training tutorials that can be targeted to specific groups of users.

CASE STUDIES ON MIGRATING TO OFFICE 365

MANUFACTURING FIRM IN SWEDEN

A medium-sized firm (275 users globally) migrated from Hosted Exchange (with Rackspace) to Exchange Online, with the goal of gaining consistent licensing one of the key drivers for the migration. Migration took place over three weeks, thanks to the use of a third-party migration tool that handled both Exchange mailboxes and public folders. One of the complexities during the migration was ensuring unbroken mail flow while migrating public folders. After the migration, the most significant challenge was providing good advice to end users on the best tool to use for which activity, since the whole platform is not 100% ready for the enterprise. For example, while Exchange Online works fine, newer capabilities like Skype for Business and OneDrive for Business operate less reliably. The firm took a few lessons from the migration too: clean your mailbox before migrating, archive email before moving to Office 365, and communicate earlier with end users.

UNIVERSITY IN THE UNITED STATES

Migrated over three months in late 2013 to Office 365, with staff and faculty coming from Exchange 2010 on-premises, and students coming from Live@EDU. This was prefaced with some months of planning, in order to map out which mail systems people were coming from and where they would end up. One significant challenge the university has had to deal with is Microsoft's frequent changes on direction, licensing allowances, and recommendations on approach. For example, that students can't be in the tenant, and then a reversal so they could be. Or the need for individual licenses for everyone, with a subsequent reversal and permission for a combined license. Another significant issue is Microsoft's approach of releasing new capabilities with little or no communication; for example, the auto-processing of less

Messages that have been archived can be reconnected to the original mailbox, so users have seamless access to their archived messages after the migration to Office 365.

important email in Outlook into the Clutter folder has been an "unmitigated disaster" for the university. Third, the university has found the legal hold and e-discovery capabilities in Office 365 to be "basic and extremely painful to use." Finally, the quality of edge filtering in Exchange Online Protection is severely limited, and the university is evaluating a secondary edge filtering service to add another layer of security.

HEALTHCARE FIRM IN THE UNITED STATES

Migrated from Google Apps to Exchange Online, taking three months to migrate 75 mailboxes. Early pre-migration testing showed the IMAP migration option from Microsoft would work fine, but on executing the migration, the firm discovered various problems that required subsequent rounds of migration activity. The firm also found that resource bookings and conference rooms didn't migrate properly from Google Apps, necessitating the creation of a fresh set of resources and the rescheduling of affected meetings. In light of these issues, the firm would put more effort into pre-migration testing and analysis, in order to decrease negative impacts for users.

UNIVERSITY IN THE UNITED STATES

The university migrated from GroupWise to Office 365, in order to move from a capital expenditure model to an operating expenditure one. The university ran both systems side-by-side for a while, with email forwarding rules established from GroupWise to Office 365. Students were cut across to Office 365 over a weekend, while staff and faculty were migrated department-by-department over a 6-month timeframe. The university used a third-party migration tool, but it was non-performant until sufficient virtual machines were put in place to provide multiple channels for migration. Challenges during migration included throttling by Microsoft, errors in appointment times after migrating to Exchange Online, and poor support for IMAP clients against Office 365.

HEALTH INSURANCE FIRM IN THE UNITED STATES

Migrated from IBM Notes and Domino, IBM Connections, and IBM Sametime to Office 365, with Exchange Online the initial focus, followed by Yammer and SharePoint Online. After resolving issues with Microsoft's compliance agreement for health care organizations, the firm migrated 5,000 employees using third-party migration tools over six months. With Notes applications still sending email, a connector was needed between Domino Directory and the new Active Directory, to ensure seamless mail flow as the environment changed. Looking back on the migration, one thing the firm would do differently is to include an Office 365 Desktop Specialist on the team, to help end users get up-and-running quickly and efficiently. Consultants from the Microsoft Business Partner firm engaged to help with the migration had good server-side capabilities, but the client-side issues floundered, causing at least three months of additional time during the migration. Other issues that had to be resolved included a new way of encrypting email (Microsoft vs. IBM), the requirement for new firewall rules, and data throttling while migrating users. Finally, given the pace of change in Office 365, the firm believes that keeping track of pending changes and the implications for the firm is a full time job for an employee.

CONCLUSIONS AND RECOMMENDATIONS

Office 365 provides a strong alternative to on-premises infrastructure for some organizations, and a strong complementary story for many. Microsoft is better positioned to deliver cost-effective email services in Exchange Online than most organizations can deliver through Exchange Server. Organizations with different email servers are migrating to Office 365; it is not just limited to Microsoft shops.

There are a lot of tasks to sequence correctly and get right in migrating to Office 365, and almost all organizations will be able to migrate with less complexity and cost by using third-party migration tools for Exchange Online, SharePoint Online, and

Office 365 provides a strong alternative to on-premises infrastructure for some organizations, and a strong complementary story for many.

OneDrive for Business. Third-party tools for migrating to Exchange Online streamline the migration process and improve flexibility. Third-party migration tools for SharePoint Online and OneDrive for Business can mitigate file naming and metadata issues during the migration, and provide ongoing content structuring and management tools.

While Office 365 is a competent service offering that is being updated frequently, organizations should evaluate the use of complementary third-party tools to bolster compliance, security, reliability, and archiving capabilities in Office 365. Some capabilities are not offered in Office 365 at all (e.g., backup), and organizations will need to look to third-party vendors to address this limitation.

SPONSOR OF THIS WHITE PAPER

Datto is an innovative provider of comprehensive backup, recovery and business continuity solutions used by thousands of managed service providers worldwide. Datto's 200+ PB purpose-built cloud and family of software and hardware devices provide Total Data Protection everywhere business data lives. Whether your data is on-prem in a physical or virtual server, or in the cloud via SaaS applications, only Datto offers end-to-end recoverability and single-vendor accountability.

Datto's innovative technologies include Instant Virtualization, Screenshot Backup Verification™, Inverse Chain Technology™, Backup Insights™, and end-to-end encryption. All Datto solutions are supported by 24/7/365 in-house technical support and selected products offer time-based cloud data retention, for predictable billing and budget management.

The Datto product line consists of the Datto SIRIS Family, Datto ALTO Family, Datto Backupify Family, Datto DNA Router, and Datto NAS.
Founded in 2007 by Austin McChord, Datto is privately held and profitable, with venture backing by General Catalyst Partners and Technology Crossover Ventures. In 2015 McChord was named to the Forbes "30 under 30" ranking of top young entrepreneurs.

datto

www.datto.com

@datto

+1 888 294 6312

contact@datto.com