

# A Guide to Migrating Files to the Cloud, for Buyers and Implementors

By: Alan Pelz-Sharpe



## The Essentials

Every organization runs multiple IT systems and silos of data. This is cost-effective and efficient for some, but for many more, these silos and systems have simply accumulated and evolved over the years into a complex, inefficient, and costly mess. For end users, this may mean that they don't know where to find, or can't easily access, a particular piece of information. For the IT department, it means supporting and maintaining many more systems than necessary. And for the business as a whole, it means spending a lot of money unnecessarily to keep these "legacy" systems and silos alive.

As the number of files that need to be managed continues to grow exponentially, many organizations explore moving these files from on-premises servers to the cloud. Cloud file migrations (CFM) are largely focused on shifting large volumes of enterprise files (documents, drawings, forms, etc.) from on-premises file servers and repositories to the cloud. There are several ways to do this:

→ Move files from an on-premises enterprise

content management (ECM) system to a newer cloud version of the same. (Many cases.)

- Move files to modern cloud-based file sharing and productivity systems such as Box, Dropbox, Microsoft 365, or Google Suite. (Happening more often.)
- Move files from on-premises servers to cloud-based business applications such as Salesforce, Workday, or NetSuite. (Occurs less often but is still important.)
- Maintain a hybrid solution, with some files remaining on-premises while others are migrated to the cloud, and all are synced up. (Only a few vendors can do this.)

The reasoning behind these migration efforts varies: historically it was simply to reduce costs, however during COVID-19 lockdowns the motivation shifted somewhat to ensuring that files stored on-premises and not accessible remotely would be available to access anytime, anywhere, and on any device.

By our estimate, around 70% of all files are still housed on-premises. What holds back most organizations is a reluctance to clear house, a wariness of touching long-established silos

of junk, and an unwillingness to question why things are the way they are. The good news is that once you embrace the need to change, cleaning up and moving on to pastures new is empowering and often revolutionary. This Analyst Brief will help you to make that shift, tackle the old, clear out the junk, and transform your business.

## Main Findings

This report is a guide for enterprise buyers considering a cloud file migration (CFM) project: what to think about and what to watch out for. The research and analysis for this report was launched in 2017 and updated in 2021. Following are our main findings:

- Despite the continued growth of the cloud, on-premises file systems have proven difficult to move to the cloud.
- Most file migrations do little more than “lift and shift” from one repository to another. Few attempt to use a migration project as an opportunity to clean up data, eliminate redundant content, or improve the general management and governance of the files being moved.
- In our research, we encountered multiple situations where an enterprise migration attempt failed and the firm then had to go through the process of choosing a different CFM tool that could truly meet their enterprise needs.
- Only a handful of migration vendors today offer true enterprise-grade solutions. Those that do almost always factor in the need for some level of services and support.

- Much more industry education is needed in the form of best practices, case studies, and training to enable enterprises to confidently move large volumes of files to the cloud.

## Lockdown and the New Normal

Migrating files to the cloud has taken on a new sense of urgency because of COVID-19 related lockdowns. Prior to this period, the drive to move files to the cloud came largely from technology vendors promising lower costs. Many enterprise buyers, though, were savvy to the fact that cloud services involve annual subscriptions and in the long run can become more costly than on-premises systems. During the pandemic period, as more workers were forced to work remotely, accessing critical files stored on-premises became immediately problematic. As such, the dynamic has shifted and buyers now lead the charge to move to the cloud.

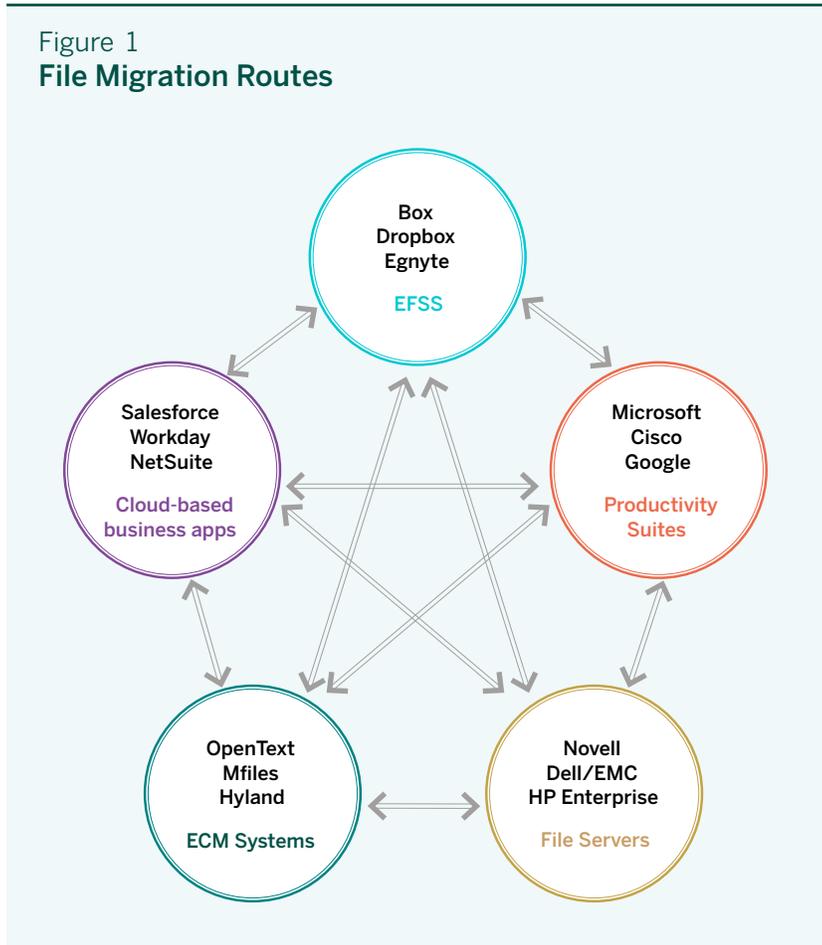
That move is proving to be more difficult than many might have imagined. The challenge is not solely in moving the files themselves, but in ensuring consistency, compliance, and structure surrounding those files. In addition, after decades of poor governance, most on-premises legacy files are no longer of value, whether because of file corruption, redundancy, duplication, or irrelevance. This challenge will be with us for many years to come, even after the pandemic.

# File Migration Scenarios

This report is about the migration of files from on-premises to the cloud, whether that be to enterprise file sync & share (EFSS) systems or productivity platforms. But that is not the entire story. For example, traditional enterprise content management (ECM) vendors also offer cloud options, and some customers are moving long-established ECM systems to cloud versions of the same system. Similarly, many traditional on-premises file server vendors are offering new hybrid products that leverage the public cloud (typically Microsoft Azure and AWS). In addition to all this, files already stored in one cloud platform (e.g., Box) are being migrated to competing cloud platforms (e.g., Egnyte). The various traffic patterns of files from on-premises to the cloud and from cloud-to-cloud, platform-to-platform, are summarized and outlined in Figure 1 and in the rest of this section.

## Migrating from on-premises file servers to EFSS

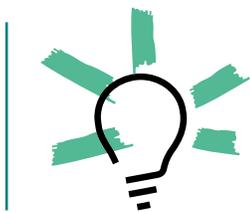
One CFM scenario is moving legacy on-premises file servers to EFSS storage. Typically, this involves multiple and often geographically dispersed file servers. For example, a firm that has file servers deployed in a number of regional offices may want to consolidate all the files into a single manageable location and opt to migrate to an EFSS system running in the cloud. Such projects are often tricky to manage due to staff resistance to change, old and unsupported file types, complex permission mapping, and large



volumes of locked and encrypted file folders. A seemingly simple migration project can rapidly become a major change management exercise.

## Migrating from on-premises to productivity platforms

Another migration scenario may involve (for example) a midsize to large firm with a big array of on-premises SharePoint instances moving over to Microsoft 365. The challenges here are similar to the EFSS scenario above,



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but also include navigating Microsoft-specific protocols in SharePoint and dealing with large volumes of often redundant and unused SharePoint instances, search applications, and embedded business processes.

## Migrating from one EFSS to another

Though we do not see many instances of large enterprise migrations from, for example, Box to Dropbox or *vice versa*, they are happening. This appears to be a growing phenomenon as enterprises try to “cloud hop” from cheap to even cheaper cloud storage venues. In theory, these migrations are relatively straightforward, particularly if the firm uses the same CFM vendor as in its first move from on-premises to the cloud. But even this scenario is not without challenges as EFSS vendors have different architectures and file management protocols.

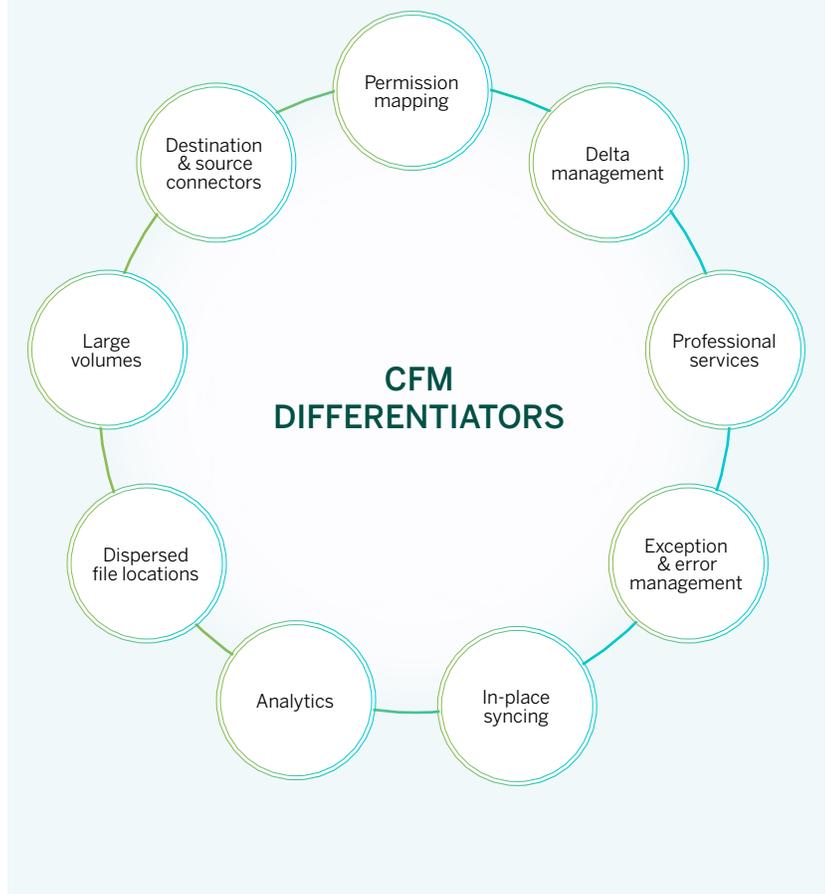
## Migrating from an ECM to an EFSS

Legacy ECM systems like Documentum and FileNet can represent a challenge in moving to the cloud. There can be complicated proprietary protocols to navigate, and in many cases the files are tied to embedded and complex rules and processes. As a result, the cost, risk, and complexity of moving can outweigh the perceived value. We do see these migrations occur, but not in large numbers.

## What Buyers Should Look For in a CFM Vendor

Not all CFM technologies and services are equal. Indeed, there are major differences between many of the CFM vendors. In our research, we encountered multiple situations where an enterprise had used one CFM service and failed in its migration efforts, then had to go through the process of choosing a different CFM tool that could meet their needs.

Figure 2  
**CFM Vendor Differentiators**



CFM vendors can be differentiated by nine basic dimensions (see Figure 2).

### Permission mapping

Permission mapping is critical to successful file migrations. In simple terms, this involves mapping the original user/group access rights and structure rights in the source location and recreating them in the destination location. CFM vendor capabilities here vary widely. Permission mapping is tricky, and many issues are likely to be raised. This is partly because many traditional on-premises file storage systems use proprietary access control list (ACL) mechanisms that can be hard to map and migrate intact.

## Delta management

In simple migration projects, IT can simply close down access to a file storage location for a set period of time, migrate the contents, then provide access to the new location. In larger migration projects, files will need to be moved in batches, incrementally, and may remain accessible to users on the old system for a short time even after being moved, while the migration project is still underway. Therefore, some files may be accessed and changed between the migration points. Managing the delta between the previously migrated files and the changes is difficult, and only a limited number of CFM vendors are capable of doing so.

## Professional services

Professional services include consulting, customer support, and technical support. In large migrations, these support services are critical, as the skills and knowledge garnered by experienced CFM vendors can mean the difference between the migration's success and failure. In our research, we noted a wide variance between the types of professional services offered and the depth and quality of those services.

## Exception and error management

Few migration projects (of any size) run without errors. Unlocking historic file storage locations will reveal some folders that contain locked or corrupted elements. There is also a high likelihood that some file types may no longer be supported, or that permissions to files and folders will be broken. Some CFM vendors treat these as errors that the customer needs to resolve. Others take a proactive stance and work to resolve the errors for the customer.

## Vendor landscape

Cloud file migration (CFM) tools are far from new, but the growth of interest in moving enterprise computing (and its associated files) to the cloud is providing significant revenue growth to both established and newer "start-up" CFM vendors. These vendors provide a critical, though often underappreciated, factor in the overall growth of cloud EFSS offerings like Box and Dropbox, as well as cloud productivity platforms such as Microsoft 365.

The past year saw a number of significant events in the CFM sector, most notably Box acquiring Cloud FastPath (CFP) and Microsoft acquiring Mover. Even so, the broad vendor landscape remains much as it was four years ago. This highly specialized and underappreciated technology sector has well over 50 vendors offering services and technologies to migrate files to the cloud, but it gets little industry attention. Some vendors are more active and visible than others: SkySync, Simflofy, Xillio, Metalogix, AvePoint, ShareGate, BitTitan, SeeUnity, and Messagepoint are the firms we see used most often. Hyland (via TSG Group) and Nuxeo are two ECM vendors that also have proven tools and techniques to undertake massive migrations (over 10 billion files) to the cloud. However, this report is not focused on the individual technologies and does not aim to compare and contrast them directly.

## Syncing in place

Though this report and the CFM vendors associated with the research are focused on file migration to the cloud, not everything will migrate. There are business situations where firms will want or need to take a hybrid approach, leaving some files *in situ* while moving others. Only a few CFM vendors have the technology to provide that kind of service.

## Analytics

Large file migrations and the subsequent management of large file volumes require advanced data analytics in order to visualize, map, and manage file locations, volumes, permissions, etc. Such analytics are critical to enable a smart migration that cleans up and identifies redundant, inactive, noncompliant, sensitive, and duplicate data and to provide the means to troubleshoot errors that are bound to occur in the migration process. *In our analysis this appears to be one of the most critical differentiators between CFM vendors.* Some provide excellent analytical and reporting tools to enable a smart migration, while others provide little of practical value.

## Ability to manage multiple, disparate storage locations

Migrating a single file server is a different proposition to migrating the contents of 30-plus file servers installed in different physical locations. Most lower-cost “point and click”

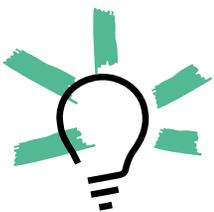
CFM vendors are optimized to migrate a single storage location, while others have been optimized to migrate multiple disparate locations in a centralized and coherent manner.

## Ability to manage large file volumes

Some CFM vendors are able to manage the migration of multiple terabytes of data in hours or days, while other vendors might take weeks. The technology and associated skills to migrate large volumes of files is a key differentiator between CFM tools. Some services have been designed for relatively low volumes, others for much higher volumes.

## Ability to map and integrate with varied source and destination platforms

Every source file location and destination has its own quirks and peculiarities. The architectures and means of accessing Box, Dropbox, and Microsoft 365 are all different, and so are the architectures of different file server and ECM products. No CFM vendor in our research has the ability to map and integrate between all the various source and destination locations in the market.



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## Best Practices

At a high level, though migrating a legacy system to a new, more modern environment requires technical expertise, any such effort should be business-led. A migration's success depends on thoroughly understanding future requirements and mapping the migration to meet those needs.

Furthermore, you should never just lift and shift everything in the old system to a new system. This is a common mistake, and it is a huge one! The small effort required to define some simple rules regarding what you need in your new system is worth it. Anything that does not meet that new need should be either disposed of or moved to a secure and very low-cost separate location. This is your chance to clean house and you will reap the rewards if you do so. It's an urban myth that you need to keep everything forever. You don't, nor should you. What you will almost certainly find in any legacy system is mountains of half-finished, duplicate, or simply irrelevant information. This should never have been kept in the first place, and it has no place in your new system.

Finally, never simply migrate content from one location to another before first optimizing and readying the new system for that content. New structures, metadata, and locations will need to be defined for the incoming content. This is not difficult to do, but many skip the step and simply end up with another useless mountain of inaccessible content now residing in a newer system. Following are typical scenarios we encounter in enterprise file migrations that raise red flags.

## Beware the lure of cheap cloud storage

Although EFSS vendors like Box, Dropbox, Accellion, and Egnyte have moved on from simply providing file sharing across devices, too many buyers still perceive them as little more than a cheap file storage option. To be clear, the EFSS vendors are working hard to counter that notion and to provide sophisticated platforms for file and process management, but the misperception persists. In our research we became aware of a number of high-value enterprises that are currently moving from one EFSS vendor to another simply because a better financial deal was offered. They told us that storage costs were their primary concern, and they did not rule out future large migrations to save on costs.

## Never simply lift and shift

In researching this report, one of the biggest surprises we encountered was the fact that virtually no major migration project that we looked at involved significantly cleaning and optimizing the files – before, during, or after the migration process. Two common issues appeared to fuel this situation:

- Migrations were undertaken simply to reduce storage costs.
- Nobody was designated responsible for deciding which files could be deleted or destroyed as part of the move.

In essence, many major file migration projects are typically little more than “lift and shift” activities. The challenge here is that the problems associated with poorly managed files in the original on-premises legacy system are then perpetuated in the cloud.

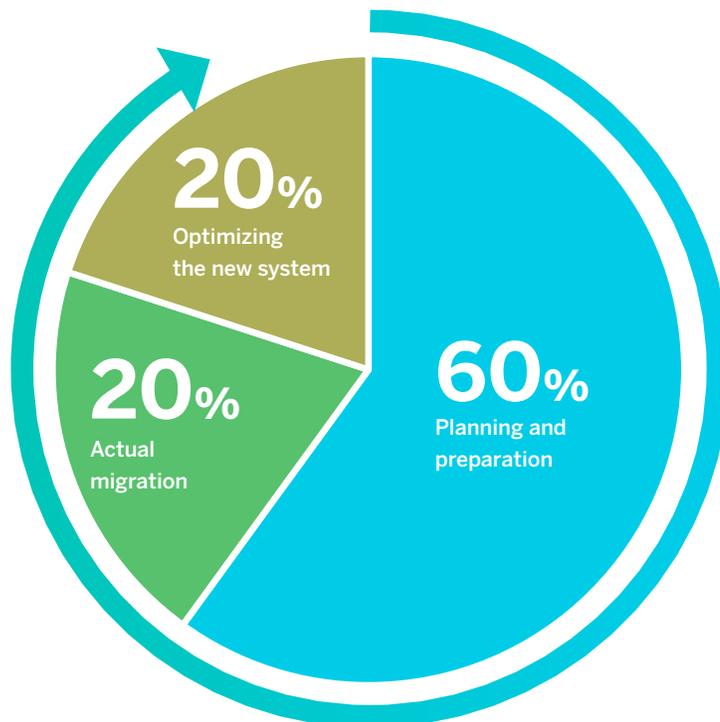
## The cloud is not always the best venue

Not everything is moving to the cloud, and even if it eventually does, it will take decades. Enterprises keep files on-premises for many valid reasons. Enterprises that regularly move large files (for example 30-40 GB in size) often prefer the bandwidth-friendly option of keeping things on-premises. Similarly, many rural locations have bandwidth issues, and the strength and speed of connectivity (along with its price) can differ markedly from country to country. To put it another way, systems built in Silicon Valley do not always run well outside other similar conurbations.

## Don't forget about enterprise search

Though many migrations are essentially limited to moving legacy shared folder structures and permissions, in many organizations there may be one or more enterprise search applications optimized and mapped to the source files. These search systems are usually not a part of the migration, as the assumption is that the new location (e.g., Microsoft 365 or Box) will automatically crawl the imported files and provide an equivalent search mechanism. Often, though, this is not the case, as the files will need to be re-indexed in the destination location and there may well be limitations on the new system's ability to index and crawl the new content.

Figure 3  
**Timing for Migration Projects**



## Call to Action

### Your Migration Template

Figure 3 shows our basic guide to the migration process. We call it the 60-20-20 plan, as that is how you will divide your time: 60% in planning and preparing to decommission your legacy system, 20% in the actual migration process, and another 20% in optimizing the modern system to accommodate and leverage the migrated content.

But how much time should you spend in all? The honest answer is that it depends. If the plan we suggest here is followed correctly, it may be a matter of days or weeks for a simple system, longer for more complex and larger legacy systems. Either way, no migration project except for extreme examples – ones you likely want to avoid anyway – should last an inordinate length of time. Again, to be clear, some legacy systems are too complex and high-risk to touch, but they are a small minority. Many more systems, such as legacy document management, SharePoint, and file servers are relatively easy and low-risk to close and migrate to more modern and efficient (typically cloud-based) systems.

The very idea of transformation can be overwhelming. But it doesn't have to be like that, and no matter where you and your organization are at today, positive progress can be made quickly. It's really not as difficult, expensive, or complex as many would have you believe. You just need to know where to start, and very often that is in migrating legacy files from on-premises to the cloud. As with a house makeover, you start by clearing out the clutter and bringing some order to the chaos. In the process you find long-lost treasures, and in the end you can thrive in the right space and environment.

### Related Reports:

#### **EFSS Is Dead. Long Live EFSS!**

<https://www.deep-analysis.net/report/enterprise-file-sharing/>

#### **Box Brings on Cloud FastPath Assets and Team – Our Thoughts**

<https://www.deep-analysis.net/box-acquires-cloud-fastpath-our-thoughts/>

#### **Moving Files and Last Friday**

<https://www.deep-analysis.net/moving-files-and-last-friday/>

#### **Content Services Are Taken to 11**

<https://www.deep-analysis.net/content-services-are-taken-to-11/>

#### **EFSS Is Growing Up....**

<https://www.deep-analysis.net/efss-is-growing-up/>

#### **Documentum... Still Rockin' in the Free World**

<https://www.deep-analysis.net/documentum-opentext-analyst/>

#### **Dropbox Launches Large File Transfer**

<https://www.deep-analysis.net/dropbox-launches-large-file-transfer/>

#### **Mover Moves to Microsoft**

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**Deep Analysis** is an advisory firm that helps organizations understand and address the challenges of innovative and disruptive technologies in the enterprise software marketplace.

Its work is built on decades of experience in advising and consulting to global technology firms large and small, from SAP, Oracle, and HP to countless start-ups.

Led by Alan Pelz-Sharpe, the firm focuses on Information Management and the business application of Cloud, Artificial Intelligence, and Blockchain. Deep Analysis recently published the book "Practical Artificial Intelligence: An Enterprise Playbook," co-authored by Alan and Kashyap Kompella, outlining strategies for organizations to avoid pitfalls and successfully deploy AI.

Deep Analysis works with technology vendors to improve their understanding and provide actionable guidance on current and future market opportunities.

Yet, unlike traditional analyst firms, Deep Analysis takes a buyer-centric approach to its research and understands real-world buyer and market needs versus the "echo chamber" of the technology industry.

## Contact us:

[info@deep-analysis.net](mailto:info@deep-analysis.net)

+1 978 877 7915



## About the Author

Alan Pelz-Sharpe is the founder of Deep Analysis. He has over 25 years of experience in the IT industry, working with a wide variety of end-user organizations like FedEx, The Mayo Clinic, and Allstate, and vendors ranging from Oracle and IBM to start-ups around the world. Alan was formerly a Partner at The Real Story Group, Consulting Director at Indian Services firm Wipro, Research Director at 451, and VP for North America at industry analyst firm Ovum. He is regularly quoted in the press, including the *Wall Street Journal* and *The Guardian*, and has appeared on the BBC, CNBC, and ABC as an expert guest.