

# Backup Best Practices and Strategies

This paper outlines a basic strategy for law firms to backup their critical data, and reviews the various backup options and technology issues that firms should consider when implementing a backup plan. It is a supplement to the articles in **LAWPRO Magazine: Cybercrime and law firms**, published December 2013 and available at [www.practicepro.ca/magazinearchives](http://www.practicepro.ca/magazinearchives).

**Acknowledgement:** With thanks, it is acknowledged that the majority of this paper was originally written by Catherine Sanders Reach, Director of Law Practice Management & Technology at the Chicago Bar Association and Joshua Poje, Director of the Legal Technology Resource Center at the American Bar Association.

## TABLE OF CONTENTS

5 Step Backup Strategy .....	0
Step 1: Analyze .....	1
Step 2: Plan .....	1
Step 3: Implement.....	2
Step 4: Test .....	2
Step 5: Review.....	2
The Cloud .....	3
The Cloud: Due Diligence .....	3
Offline Access: When the Cloud is Down.....	4
Backup: Disc Image .....	6
Backup: Email.....	7
Backup: Social Media .....	8
Online Backup .....	9
Backup: Hardware/Software.....	9

## 5 STEP BACKUP STRATEGY

Securing and protecting your firm’s data is essential. Client files, important communications, and valuable work product often exist exclusively in digital format today, and thus a major data loss could have catastrophic professional and ethical ramifications.

Whether you're revisiting an existing backup strategy or seriously implementing one for the first time, this five step plan will help make sure you're covering your bases.

## STEP 1: ANALYZE

The first step in developing a data backup strategy for your firm is to analyze your current data usage. What data do you store, where do you store it, how often do you access it, and what are the risks and costs associated with losing that data? This is a challenging endeavour in the current computing environment, as data may be spread across numerous devices and services: computers, laptops, tablets, smartphones, firm servers and cloud computing platforms, etc.

Be sure to involve everyone in your firm in this exercise. You'll probably be surprised to learn where firm employees—lawyers and staff alike—are storing valuable data. Use the opportunity to review your firm's overall handling of sensitive data. If, for example, sensitive documents are being sent to personal email addresses so employees can work from home over the weekend, you may be facing serious security and confidentiality problems that will need to be addressed along with the backup issues.

In the end, your backup analysis should establish:

- What electronic data your firm currently uses;
- Where that data resides, including the specific vendor/host if it's held outside of the office;
- The approximate amount of data (e.g. 2TB);
- The sensitivity of data, both in terms of confidentiality and time (i.e. urgent matters).

## STEP 2: PLAN

Once you have a firm grasp of the size and scope of the data you need to backup, you should begin developing an actual backup plan. Your backup plan should provide at least two levels of redundancy (a "belt and suspenders" approach), with both data redundancy (more than one backup of any given file) and geographic redundancy (backups housed in more than one geographic location).

The exact tools and software you use will vary widely depending on the size of your firm and the complexity of your electronic efforts. In general, you should:

- Focus on business-grade tools. Popular online backup tools geared towards consumers and less-sensitive consumer data may not be appropriate for law firm data.
- Plan for where you'll be, not where you are. The quantity of data you need to backup is only going to increase as time goes by.
- Work with any outside companies that will hold your data. You will need to understand how safely and securely they are holding your data, how you access it, the business terms of your relationship, etc. (See "The Cloud: Due Diligence" below).
- You should also try to keep local copies of any data you store with a third-party, and you should be sure the third-party has their own backup strategy.
- Keep security at the front of your mind. Data needs to be backed up, but it also needs to be kept secure.

### STEP 3: IMPLEMENT

It may seem obvious to say that the next step is to implement your plan, but this is unfortunately where many well-intentioned backup strategies fall apart. Corners are cut both in cost and time, key efforts are entrusted to people who lack technology expertise, software and hardware is installed but never properly configured, and so forth.

Keep in mind that proper backup is critical to maintaining a healthy, stable, ethical law practice, and invest in its implementation appropriately. If your firm lacks the technology know-how to do this in-house, find an expert to help.

The keys to proper implementation:

- Don't cut corners--follow through on the plan you developed in Step 2.
- That said, stay flexible—you may discover during implementation that you missed something. This is the time to correct the error.
- If necessary, get expert help to implement your backup system correctly.

### STEP 4: TEST

It's an all too common horror story: a business has a catastrophic data loss, turns to their backup system to recover the data, and only *then* discovers there's a serious flaw in their backup strategy. Maybe data was backing up monthly rather than daily, or key files were being left out of regular backups entirely, or perhaps the backup hard drive itself has failed. There can be many causes, but the results are the same: your backup efforts come to nothing because you've failed to test your system and didn't realize it wasn't working properly.

As a best practice, you should test your backup solution immediately after implementation and routinely thereafter. Simulate real-world disaster scenarios, from the major (total loss of a system) to the relatively minor (accidentally erasing a single file).

Not only does regular testing help identify problems in your backup setup, it also has the benefit of training your staff to quickly and efficiently recover files in the event that it's necessary to do so. This means that if you ever experience a real computer loss and need to restore from your backups, you'll be prepared to do so.

- Test your setup immediately to be sure it's working as intended.
- Periodically re-test your systems to ensure they're functional and data is being backed up appropriately.
- Prepare to restore data quickly in the event of data loss to minimize impact on your firm.

### STEP 5: REVIEW

Your data backup strategy will begin to be outdated almost immediately after you implement it. The reason is simple: technology advances at an incredibly rapid rate. New tools, new software, new data—each requires that you adjust your strategy.

- Conduct a full review of your strategy at least annually—more often if your setup is particularly complicated.
- Revisit your backup strategy anytime you make a significant technology investment.

## THE CLOUD

When considering your backup options, the “cloud” will come up, both as you likely already have some data in the cloud, and there are backup options that involve placing your data in the cloud. Don’t think you use the cloud? Think again. If you do online banking or bill payments, or use a smartphone, Gmail or another free email service, you have data in the cloud. What is the cloud? You are using the cloud if you use an Internet browser to access your data or run a program across the web. Your programs and data reside on a computer that is across town or on the other side of the world. You are no longer installing software or running programs on your own computers. These types of services are sometimes called “Software as a Service” or “SaaS.”.

Almost all traditional law office software programs are now available on the cloud, including standard office applications, time and billing or case management applications, and electronic discovery and document repositories.

There are several benefits to working in the cloud. First, you can access your data and work from anywhere in the world as long as you have an Internet connection. Second, you have access to powerful functionality for a low monthly fee and you avoid the large upfront and ongoing maintenance costs for running network hardware and software in your own office.

But there are potential drawbacks to working in the cloud – your data is on a computer outside your physical control. Thus, before using a cloud service, you should understand how it works and complete adequate due diligence on the provider.

### THE CLOUD: DUE DILIGENCE

Here are 20 questions you should be sure to ask any cloud vendor before committing your data to their hands. Vendors that aren’t willing or able to answer these questions should be treated with caution.

- Do you offer a trial period or demo of your product?
- What training options are available for customers?
- What kind of documentation (e.g. knowledge base, product manual) is available for your product?
- How often are new features added to your product?
- How does your software integrate with other products on the market, especially products in the legal market?
- How many lawyers are currently using your product?
- What hours is your tech support available?
- Do you offer a Service Level Agreement (SLA) and/or would you be willing to negotiate one?

- What types of guarantees and disclaimers of liability do you include in your Terms of Service?
- How do you safeguard the privacy/confidentiality of stored data?
- Who has access to my firm's data when it's stored on your servers?
- Have you (or your data centre) ever had a data breach?
- How often, and in what manner, will my data be backed up?
- What is your company's history – e.g., how long have you been in business and where do you derive your funding?
- Can I remove or copy my data from your servers in a non-proprietary format?
- What happens to my data if your company is sold or goes out of business?
- Do you require a contractual agreement for a certain length of service (e.g. 12 months, 24 months)?
- What is the pricing history of your product? How often do you increase rates?
- Are there any incidental costs I should be aware of?
- Are the vendor's servers in the Canada or elsewhere in the world? With regard to the data you will store on those servers, are there any issues under *PIPEDA*, *The Sarbanes-Oxley* or *Homeland Security Acts*. (Two options that may address these concerns are encrypting your *before* it leaves your computer and/or asking for your client's consent to store information outside of Canada).

Any online cloud backup service you use (and for that matter, any other cloud service you use) should be well scrutinized. The above questions are a start. The [Law Society of British Columbia has a more detailed Cloud Computing Checklist](#) that addresses additional questions and considerations that will help you evaluate a cloud service provider.

## OFFLINE ACCESS: WHEN THE CLOUD IS DOWN

Sometimes you just don't have access to the Internet. Whether you're traveling in a plane, or in a remote (or sometimes not so remote) area that has no WiFi, 3G or 4G coverage, or simply because your cable or T1 line is down due to weather or some other outage, on occasion you will have some forced downtime because you can't access your cloud-based documents, send emails, or pull up a client's contact information from a cloud-based provider. In fact, it is likely to happen at the most inopportune moment. Fortunately, there are ways to access online information locally.

### Google in the House

Although [Gears is gone](#), Gmail, Google Docs and Google Calendar are all still available in an offline mode. You won't be able to send and receive messages, but Gmail email and contacts are available offline through a [Chrome web app](#) (in BETA). Of course, you can also set up IMAP or POP to maintain a local copy in the email client of your choice. Likewise you can install the [Google Calendar Chrome web app](#) and access a read-only version of your calendar anytime. Alternatively, you can sync it with a local calendar application. At [Google's Sync Center](#) you can learn to sync Gmail and the calendar with most all of your desktop (PC and Mac) and mobile (Android and iOS) devices.

To [set up Docs offline](#) go to the settings in Google Docs and click the link at the bottom to “set up Docs offline BETA.” You can set up offline docs locally, though you will have read-only access to Google docs, spreadsheets, presentations, etc. For Microsoft Office or other document formats you uploaded to Google Docs, you will still be able to edit them. You will also need a Chrome web app, and this will only work in the Chrome browser. Google recommends that you do not use this option for shared computers, since the files will be available to anyone who has access to those computers. Google Apps administrators can use the [Chrome browser for Business MSI](#) to push out offline capabilities to the entire office.

### **Paper Chase**

So, you say you want to have your cloud and eat it, too? There’s another option for offline access to Microsoft Office documents that allows for the power of collaboration with Google Docs, with the familiar and local format of MS Office: [Cloud Connect for Microsoft Office](#) through Google Apps. [Tech Republic](#) noted that Cloud Connect was less expensive than Microsoft’s own Office 365, a selling factor to the price-sensitive enterprise customer. [Office 365](#) lets you take advantage of all your local MS Office applications in the cloud—and offline.

Online file storage and sync services like Dropbox keep a local copy of your file, unless you take steps to remove it. Drive, Google’s new competitor to Dropbox, allows [for offline access](#) in the settings, through a few clicks and a Chrome Web Store install. Apple’s iCloud, similar to Dropbox, maintains a [cloud copy of your Apple content](#).

Tools like [Evernote](#) also make having a local copy of your data easy and available. A lightweight software version resides on the desktop, syncing with the cloud version and your apps. Offline or online you have access to all the information stored in Evernote.

### **Legal Document Management Ease**

Whether you’re creating documents and email in the cloud and maintaining a local copy, or generating content on your desktop and syncing to the cloud, offline access for the “simple” tools is pretty straightforward. What about offline access to more complex applications, like legal document management or practice management? In most cases there is not a complete replication of the software and data locally, although the growing development of HTML5 will be changing that in the near future. For now, many lawyers still have a few offline options.

Some practice management applications like MyCase, Clio and Rocket Matter have various sync capabilities with Google Apps, as well as Google Calendar and Gmail. Since Google makes these services available offline, you can access some of the stored data, though not the entire database. In all three cases the representatives for these products were enthusiastic that offline access was in the development calendar. Additionally, these providers have sync capabilities with Microsoft Outlook, which will also serve to create a local copy of some of the data (although you will need to sync Outlook with Google to sync with Rocket Matter).

Clio has added a specific offline feature for a time-entry application, called Express. The recently revamped [Clio Express](#) takes advantage of the same offline technology through Google Chrome that

Google Apps offline uses, and you will need to use Chrome and download Clio Express from the Chrome Web Store. The last 30 days of time entries, all enabled account users, matters, activity description and running timers will be available offline.

One practice management SaaS product available with complete offline functionality is [Advologix](#). Advologix is built on the Force.com platform, and it leverages that company's (relatively) long history and focus on enterprise. A representative at Advologix said that while offline was available, it was not part of the standard offering and requires extra time and expense. They do offer standard Microsoft Outlook, Office and Google Apps integration.

While traditional document management software like Worldox now offers a SaaS version ([Worldox/Web Mobile](#)), the files are still available on the local server. Native SaaS document management provider NetDocuments offers to set up a local version of the NetDocuments repository, so that users can have access offline. This is the [local document server](#), which is an add-on that is an additional 7 percent of the total user subscription fee.

Needless to say, the above is not comprehensive, but rather it provides a taste of some of the options. Check with your favorite cloud providers to see if and how you can access information offline. As we see business adoption of the cloud mature, we will likely see a rise in the number of offline options to address not only the concern for when Internet access is slow or impossible, but also for business continuity.

## BACKUP: DISC IMAGE

You have your computer backup strategy carefully planned. Your files are backed up in three locations, your servers are in a RAID array, you have all your installation disks and license numbers handy, and you have a test restore for your files scheduled on a regular basis. You are ready for the day that your hard drive fails. Or are you?

The best backup plans in the world often fail to recognize the time commitment involved in a ground-up hard drive recovery, including re-installing the operating system, software, drivers and files, plus customization and configuration. To speed things up, consider adding disk imaging to your backup arsenal. Disk imaging (or cloning) essentially takes a snapshot of your hard drive, including software, configuration, files and so forth, so that you can get your computer back up and running faster.

- **Windows XP/Vista.** For users of Windows XP, you will need to use a third-party software tool such as [Acronis True Image](#), [Norton Ghost](#) or [ShadowProtect](#) to create a disk image. Most of the third-party tools will cost \$50 to \$100, however, there are some free tools, like [DriveImage XML](#), that require a bit more [technical skill](#). MS introduced drive imaging into the Vista operating system (Ultimate, Business and Enterprise only), but most reports suggest it is difficult to use and not extremely effective. The third-party commercial tools are designed to make disk imaging easy to use and effective.

- **Mac OS X 10.4 (Tiger).** Macintosh users still running Tiger will need to get third-party tools to create a disk image. These tools include shareware [Carbon Copy Cloner](#) and [Super Duper](#) (\$27.95 fully functional) and others.
- **Windows 7.** Windows 7 offers disk imaging as built-in functionality in all versions of the OS. It is reportedly easy to set up, and restore from, as detailed in these [step-by-step instructions](#).
- **Mac OS X 10.5 (Leopard) and up.** Mac users running current versions of the operating system have cloning built in through the Time Machine feature. Mac 101 has a nice set of instructions on how to [setup Time Machine to create a disk image](#). This tutorial also includes instructions on how to restore your hard drive from Time Machine.
- **Windows 8.** Microsoft's latest operating system offers disk imaging as built-in functionality, but it is not easy to find. These [step-by-step instructions will help you find this option and create a disk image](#).

Although you will be given options with the third-party tools, and the built-in functionality of your OS, to clone your drive to a set of DVDs, this is not practical given the huge drive capacities on today's computers. Save the disk image to an external hard drive, and you won't have to worry about switching disks or space limitations. An external hard drive with a terabyte capacity costs around \$100. These devices are available with USB and Firewire connectors, and are truly plug-n-play.

Imaging has long been used by IT departments, which are constantly deploying computers to new users or restoring crashed hard drives. But *anyone* who wants to keep a complete working copy of their hard drive on hand should consider adding disk imaging to their backup arsenal.

## BACKUP: EMAIL

Google's Gmail has made news in the past couple of years by ["losing" users' e-mail](#)—often years' worth. While these outages have primarily affected the free Gmail service, even access to the [paid Google Apps](#) has occasionally been lost. More egregiously, in 2008 Charter Communications (an ISP) accidentally [deleted 14,000 customers e-mail accounts](#)—and all the e-mail messages in them. For lawyers who are using the free Gmail, or other webmail services, as their primary e-mail tool for client communications, one must ask, "How are you backing that up?"

With Gmail, there are a number of options.

- You can run [Gmail Offline Chrome App](#) to maintain a local copy of Gmail. This is a pretty useful option, letting you choose which folders you want to maintain locally. Look in Gmail Settings under "offline" to set this up.
- Another option is to set up IMAP, which synchronizes your Gmail to a downloaded e-mail client (like the free and multi-OS compatible [Thunderbird](#), [Eudora](#) or open source [Zimbra](#)) to keep on your server or hard drive. (Which you *do* back up, don't you?)

- Or you can set up POP to keep a copy of your e-mail local, but with no synchronization.

On the downside, free Yahoo! Mail has no easy options to download or synchronize mail locally, though their premium service, Yahoo! Mail Plus, does allow you to POP e-mail to a local e-mail application. Windows Live (aka MS Outlook Express) has built-in functionality to download MS Hotmail, as well as mail from Gmail and Hotmail. For other web-based e-mail services, including those provided by your ISP, you can hunt around for instructions or FAQs to see what your options are for creating a local backup.

Free open-source POP tools such as [freePOPs](#) let you POP from most common web-based e-mail providers. The free-to-try [IzyMail](#) creates POP, IMAP or SMTP connections from webmail to a local e-mail client, as well as easily pushes e-mail to iPhone, BlackBerry and other mobile devices. There is an [extension for Thunderbird](#) to integrate with most major webmail providers, and [Zimbra](#) also has built-in aggregation.

To backup email in MS Outlook if you are using hosted Exchange make sure the provider keeps a backup copy. There is no easy way to archive a folder full of emails in MS Outlook. If you want to save emails from a stand-alone installation of MS Outlook you can save each email as HTML or text file, or all the folders as a .pst file. However, Adobe Acrobat has provided an Outlook plugin in their professional line that lets you quickly and easily create a sortable, searchable PDF archive of email messages. You can select a folder, and right (alternate) click to create a PDF portfolio of all the email messages in the folder, which can be searched, sorted, and extracted. Email attachments are also saved, but they are not converted to PDF. For management of closed matters, simple ediscovery and archiving this is a really great feature of the Adobe Acrobat pro version.

Really, there are lots of options. Don't let your record of client communication fly in the ether without a safety net.

## BACKUP: SOCIAL MEDIA

While there are many ways to get back into social media content, the information is vast and fleeting. You may have a need to capture and keep social media content, either for your firm, or your client, as backup, as a record of interactions, or to ensure compliance with a social media policy. You may have heard of the <"Wayback Machine" aka The Internet Archive>, which records pages of certain webpages and archives them. The problem with this site is that it is inconsistent as to which sites it archives, and for how long. For lawyers who want to take control of monitoring and storing webpage content, enter [Iterasi](#). This tool bills itself as a corporate compliance, litigation protection, compliance, and brand heritage tool. It is not free, but for lawyers and companies who need this type of service, it can be invaluable. It is a web archiving tool that will "scrape" the screens of even complex websites, as well as capturing RSS feeds, topics discussed in social networks, and any website the user happens to visit. The company provides several discrete products, one web archiving tool, a social media monitoring application, and a "notary" tool to archive individual pages on the fly. Similar to Iterasi, NextPoint's [Preservation Cloud](#) crawls and archives specific web properties – blogs, social media sites, webpages. You can tag, export, and search the data collected. Like Iterasi, this is a cloud tool, so the data

is stored on external servers, which does introduce some risk in using the service, while making it easy to sign up and get going as there is no installation or configuration.

There are tools like [Backupify](#) that backup Google Apps and also Facebook Pages and Twitter accounts. A personal account is free, but limits storage to 1GB and backs up only weekly. [SocialSafe](#) backs up Facebook, Twitter, LinkedIn, Google+ and others on your computer. To archive your website talk to your site host. For those running WordPress there is the [Backup Buddy](#) or [BackWPup](#) WordPress plugins to back up your posts. You could also [use IFTTT \(If This Then That\)](#) to capture and direct social media posts or other content to a second location (e.g., a Google Docs document) on an ongoing basis.

## ONLINE BACKUP

With the growing availability of broadband internet access, online storage for your critical data is also an option. Ranging from products from Mozy ([www.mozy.com](http://www.mozy.com)) and Carbonite ([www.carbonite.com](http://www.carbonite.com)) to CrashPlan ([www.crashplan.com](http://www.crashplan.com)), these companies provide a wide range of support and services.

Note that file synchronization tools such as <SugarSync> and <Dropbox> are not the same as a full online backup. Online backup services offer encryption in transit and storage, versioning, process automation, as well as server backup and other sophisticated functions needed by businesses.

## BACKUP: HARDWARE/SOFTWARE

Numerous software options are available and often come bundled with the storage device. Forget the old disc and tape devices, and go to external hard drives like Maxtor or ABS. The software is more important than the hardware, because it has to work well for the user or the user won't use it! Too often lawyers buy the back-up device but fail to use it because the software is cumbersome or does not have automatic settings. Consider <Backup Now>, <BackupMyPC>, <Retrospect Backup>, or CMS' <Bounce Back>. Whichever method you choose, your office computer should be backed up daily. That is where the competent person comes in! Unless the backup system is used, the technology is worthless. Make sure a competent person carries out this important security step in your firm. Also, do a periodic test to restore a file to make sure your backup system is working.