HIGHLIGHTING
DATA PROTECTION:

A studied approach to preventing data loss in Google Apps For Education

Use this eBook to help you understand a major problem you didn't know you had: data loss in your Google Apps environment.

You may think you're fully protected, but without a backup and recovery solution, your teachers, administrators, students, and critical data remain at risk.

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What you don't know about Google Apps

If you're one of the millions of people currently using Google Apps for Education, you no doubt love the agility, flexibility, and collaboration the software provides. Educational institutions from private kindergartens to major public universities are adopting and manipulating this tool in new and creative ways each day.

Some schools use Google Docs as a hall pass system in addition to a resource for group projects; instead of passing out several sheets of paper for homework, teachers are now using Gmail to electronically send assignments. The possibilities are endless, and in many ways, Google Apps is increasing the quality and accessibility of education.

Yet in spite of several advantages of the software, there are a few unexpected and notable challenges that adoption of Google Apps for Education presents.

Many users are surprised to learn that Google cannot protect them from data loss due to human error, hacking, malicious behavior, sync malfunctions, and mistakes in collaboration.

That means you are not protected from data loss if any of these scenarios happen to you:

▶ You accidentally delete your Google Spreadsheet gradebook

▶ A file sync corrupts an entire year of lesson plans

▶ A colleague inadvertently overwrites your work on a team initiative stored in Drive

> "
> When we moved to Google Apps, we knew we had to have some kind of backup. My understanding was that Google could restore your account, but there's no guarantee that they could restore a single email or folder, and that could be critical."
>
> **CHRISTOPHER GLEESON**
> Robert H. Smith School of Business, University of Maryland

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YOUR DATA ISN'T FULLY PROTECTED FROM LOSS

Educators hold immense responsibility. Your jobs are already among the most important and difficult on Earth without having to worry about whether your projects, records, and emails will be there when you need them.

But if you don't have a backup and recovery plan for your institution, you are at risk of losing critical student data, research files, course websites, and more.

There's a common misperception that Google can help you recover your data if it ever gets lost, but this is unfortunately untrue. To be clear: Google has full disaster recovery capabilities. However, that includes recovery from their disasters (like server failure or natural disasters), not yours.

The lamentable reality is that without a backup plan for your Google Drive, Sites, Calendar, Contacts, and Gmail, you are simply out of luck if you accidentally delete something, lose information while migrating to a new device, a colleague overwrites your work on a file shared with your entire department.

Consider these issues posted to Google Apps forums by educators and IT admins at schools that illustrate what data loss in Google Apps for Education looks like in real life:

▶ *We had an incident today where the teacher watched the kids insert data into a lab report. They closed it and then reopened it – all of the data was gone. We checked the revision history – nothing! I have never seen, nor heard, of this happening. The teacher says he definitely saw the kids' lab report with data (he watched over their shoulders).*

▶ *One of our staff members had their account hijacked (the person actually had the login and PW information for this user) and the hijacker has erased all contacts from their Google Contact list. Is there a way to get the contacts back?*

▶ *Just heard from a tech support person that she accidentally deleted the wrong account – 2 students with the same name and she didn't notice (at the time) the grad dates. Does anyone have a way to recover his data? He's a senior and has some info in his Drive he wants. It happened yesterday.*

In all of these cases, Google was unable to help because while they protect your data from their own mishaps, they don't protect your data from problems that occur on your end.

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GOOGLE VAULT AND TAKEOUT AREN'T THE (COMPLETE) ANSWER

Many users who understand the vulnerabilities associated with Google Apps mistakenly think that either Google Vault or Takeout is all they need to ensure availability of their data at all times, but this results from a number of misconceptions about the purpose of these products.

While both provide mechanisms to copy data for safekeeping, neither allows end-users to recover and restore data that has disappeared. And for teachers, students, and administrators that need immediate access to critical information each day, backup without recovery might as well be no backup at all.

Vault is a tool for archiving and eDiscovery, which are best practices in regulated industries; it is not a backup plan, and it does not allow you as an end user to retrieve your information in the event of a loss. It was created by lawyers for legal matters (litigation & compliance audits); it will prevent data loss if an account is placed on litigation hold and has not been deleted; it covers Gmail and chat messages, and it allows administrators to search for and export data.

Takeout allows those using Google products to export their data to a downloadable ZIP file. It allows you to create a customized archive or transfer all your data to another service or vendor, but it does not automatically back up your critical information or efficiently restore that data back into your Google Apps when it goes missing.

If you use Vault or Takeout, you still need a reliable backup and recovery solution to handle your daily data loss prevention.

This will keep all your important cloud-stored data like student records, curriculum planning, research reports, faculty calendars, and more backed up and available at all times, allowing you to quickly recover data when it goes missing for any reason.

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**SPANNING BACKUP
USER STORY:**

CHRIS GLEESON
University of Maryland
Robert H. Smith School of Business

Organization size: 5,470
School type: Public university

▶ **Value of backup and recovery:**
Spanning Backup has allowed me to focus my time and energy on improving and developing new services for our users and community, comfortable that the 'headache' of data protection is being handed.

▶ **Using Spanning:**
The training window to get someone up and running on Spanning is minutes because it is so simple to use, you can literally go over the basics in five minutes, and I've not yet had someone come back and say 'OK now how do I do this?' Everything you need is right there in the console and it's self-explanatory.

[Learn more](#) about how The University of Maryland's is using Spanning Backup to protect their Google Apps data.

▶ **Favorite feature:**
My favorite feature of Spanning Backup is the ability for users to selfserve their own data protection needs without having to wait for IT assistance. If a user has accidentally deleted data and needs to restore it, it's incredibly easy for them to do.

▶ **The moment of truth:**
A few weeks ago, there was an incident where someone overwrote a network share that had to be escalated, and with IT assistance, restored from traditional backup media. What's nice about Spanning Backup is a user can, on their own time, go back and search for a specific email or a specific folder and restore it immediately without waiting for the issue to be escalated.

"

I'd recommend Spanning because the feature set, usability, price, and responsiveness of support are second to none."

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Why you need backup and recovery for Google Apps for Education

Google Apps for Education facilitates learning in many ways, but accidents do happen, and it is important to have an insurance plan in place so that teachers and students can get back to instructing and learning as soon as possible after a data loss incident occurs.

When teachers and students aren't afraid of making mistakes because backups of their hard work are safely stored and can be recovered in just a few clicks, educators and students alike can explore new heights in the collaborative environment of the cloud.

IT'S YOUR RESPONSIBILITY

Whose responsibility is it to provide the backups of critical school information? It would be great if everyone was responsible for his or her own data and proactively found a way to create backup copies of their work. But can you really expect students to back up their own data if they are required to work in the cloud environment of Google Apps?

Teachers' lives are similarly demanding and chaotic; are they expected to protect their own information from loss?

You now know that Google also isn't accountable for ensuring your data is backed up and protected in all situations; they aren't responsible for human errors, malicious activity, or making sure you comply with state and federal regulations – you are.

By now, you've put two and two together: it's your school's responsibility to protect data, whether it belongs to students, teachers, support staff, or administrators. Most schools now have technology systems in place that they require employees and students to use. And since they're providing the framework for the data to live in, it only makes sense that they make sure the data is backed up.

If you are asking teachers and students to use cloud technology, you should be prepared to protect them from the minor glitches that come with the territory.

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THE TOP FIVE REASONS YOU NEED TO THINK ABOUT BACKUP

The gaps in your data protection plan for Google Apps for Education can be easily filled with backup and recovery. Not only can a sophisticated backup and recovery solution help you quickly and easily recover from data loss so you can maximize education and learning time, but it can also help your school comply with regulations around data storage, retention, security, and accessibility.

On the following pages you can find the top five data protection vulnerabilities in Google Apps for Education that make backup and recovery an absolute necessity for your school.

STUDENTS NEED BACKUP, TOO!

We've come a long way since lugging around reams of paper in notebooks and book bags. But "the dog ate my homework" moment can still happen to students in Google Apps.

Although there is no paper to lose, it's easy to accidentally delete a virtual assignment with the click of a mouse, and it can take much more than a click to get it back, leaving students with the same recourse as before the advent of cloud technologies; accept a bad grade or start over from scratch.

Here's why backing up education data makes sense for students too:

▶ Lost data for a student means lower grades, and lower grades have been connected to lower self-esteem, lower motivation, higher anxiety, and a general decrease in their ability to succeed in school and in life.

▶ Students generate a great deal of intellectual property and research that defines the caliber of your institution. This work needs to be protected from loss.

It's one thing if a student makes a poor grade because they didn't study. But it's quite another for them to suffer one because of a technical glitch that wiped out their hard work – work that may be an A+.

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1 Hackers and malicious insiders

Last year clocked a record number of security breaches due to hacking. According to the 2015 Data Breach Investigations Report by Verizon that analyzes a large international sample of organizations each year, there were over 79,790 reported security incidents and 2,122 confirmed data breaches in over 61 countries. As these figures continue to climb, so too do the sophistication and variety of cyberattacks.

Enter the Cryptolocker virus: one of the latest and greatest hack to hit the Net. Victims state that it comes in through email posing as a legitimate attachment and then quickly takes control of and encrypts all of your data so you are unable to access, edit, or export it. In an extraordinary display of human kindness, the perpetrators offer to return your information to you for a ransom, ever so reasonably priced at a minimum of $300. Other forms of ransomware continue to be weaponized against organizations ranging from healthcare to financial to education institutes.

As a cloud user, it may be tempting to feel exempt from concern over data loss resulting from hacking. However, according to recent research, 77% of SaaS users in the US alone have experienced data loss in their cloud applications.

HACKING:

HOW BACKUP AND RECOVERY HELP

CNN Tech reports backup as the number one way to protect yourself from hacking in the cloud, because sometimes even the best and most well-rounded attempts to keep information save can fail, resulting in data loss.

That's why you must have a plan to recover from hacking. A backup and recovery solution acts as a digital insurance policy, filling in where there are gaps in your data protection plan. If malware infects your network and you are locked out of your files, or if a hacker corrupts or deletes critical education data, you can rely on a cloud application backup and recovery solution to hand you clean versions of files, emails, contacts, and other information you need to keep your school running.

While helping you recover from a hacking event is the primary way that backup and recovery supports your overall anti-hacking effort, companies providing these services can also help your business fend off hackers before they strike by storing your data as securely as possible.

Any backup and recovery solution you select should ensure that your information is encrypted so content can't be read by unauthorized users, and that it is only unencrypted when you decide to access your data. Backup services should also protect data in transit via SSl protocol and require passwords for information access and decoding.

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2 Human error

Human error is not something we like to admit affects our productivity at work, but according to Aberdeen research, it is the leading cause of data loss in SaaS applications, accounting for 64% of data loss.

This is easy to understand when you consider the myriad of ways to make little mistakes in Google Apps. They happen when we're in a rush, tired, or confused about the specific functionality of a feature.

These are just a few of the ways you may lose important data as a result of your own mistakes:

▶ The Trash button is very close to the Share button clicking the wrong one could delete a report rather than sharing it with a colleague or professor. Without a backup and recovery solution, that file is gone for good.

▶ You don't want to see a certain shared calendar in your Google Calendar. Instead of making the calendar invisible, you choose to delete from your calendar. The problem is, you accidentally just deleted the entire shared calendar rather than removing it from your view!

▶ You've crafted an extremely important email over time, leaving it in your Drafts folder. When it comes time to edit it again, you mistakenly choose to discard your draft. Unfortunately, there's no Trash folder for drafts that retains your data even after you throw it away. That draft is gone for good.

You can't expect to be perfect all the time; nor can you expect that your faculty, staff, and students won't ever make a mistake in Google Apps.

HUMAN ERROR:
HOW BACKUP AND RECOVERY WORK

When users have an "oops" moment in Google Apps for Education, there's no need to panic if you have an effective backup and recovery solution.

Separate copies of all data are stored securely so that when mishaps occur, you can find and restore whatever went missing. Backup and recovery give you peace of mind that even when errors occur, someone's got your back and can help you get back to work with minimal delay. No more scratching your head to retype an entire email, or even worse, research paper.

With backup software, you can get that work back in no time.

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3 Sync errors

Sync errors are common, especially in the age of multiple devices and multiple accounts.

In fact, sync errors are so pervasive that Google even has a webpage dedicated to "Error messages for sync problems." Sync errors happen for a variety of reasons, some of which can result in the loss of information you need most.

These are some of the ways data can be lost to sync malfunctions:

▶ **Updating your smartphone.** Several devices, like Androids, are reported to drop contacts and more upon updating.

▶ **Syncing various devices with your Google account.** Many smartphone users complain about files, contacts, and emails disappearing (sometimes by the hundreds) when they sync a new phone with their account information or resync an old phone.

▶ **Trying to make custom adjustments.** Syncing your data after you've made custom adjustments to a device, app, or account can lead to little bugs that can wipe out your data with no way to get it back.

4 Mistakes in collaboration

Collaboration is one of the best things about Google Apps for Education, but it can also result in data loss. It is rare that peers and colleagues intentionally sabotage one another's contribution in a shared file, but misunderstandings, mistakes, and miscommunications happen frequently when multiple people have access to and the ability to alter the same information at once.

If someone you're sharing information with decides to change that work before you've had the chance to finish, you may want to back to a previous version of the file to get your work back. Without backup and recovery, you may lose your work for good.

SYNC ERRORS AND MISTAKES IN COLLABORATION:
HOW BACKUP AND RECOVERY HELP

If your backup software is equipped with point-in-time recovery, it can act like a time machine that allows you to go back to a previous version of a file. That means if a sync error causes data to disappear, or if you or someone else overwrites, deletes, or alters your work, you can easily restore your work from a prior day.

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**SPANNING BACKUP
USER STORY:**

JAY DUFF
Mannheim School District 83

Organization size: 3,088
School type: PK-8

▶ **Value of backup and recovery:**
This is about protecting against human error. It's all about protecting us from ourselves. Also, if somebody does a FOIA (Freedom of Information Act) request, we could open ourselves up to some big trouble if we don't have a piece of data that somebody asks for.

▶ **Using Spanning:**
With your backup, you shouldn't ever have to see it, use it, touch it, or anything. And, when you do, it should be seamless. Keep it intuitive, because I don't want to have to know how to use your product. I want to be able to figure it out on the fly when all hell's breaking loose, when I'm on the verge of panic because the superintendent tells me she needs a missing email, and she needs it yesterday. I don't want to have to think about what I'm doing.

I just want to be able to do it, and that's why your interface was such a big deal when I was comparing you guys to your competitors.

▶ **The moment of truth:**
In one case, a teacher erased some emails, couldn't find them and so I had to get them back. Spanning worked great. Also, we've had several instances where a cross-user restore has saved us a lot of trouble when a user was out of the office.

"

I'd recommend Spanning because the most bang for the buck. It's affordable and has all the features that we need and then some. Also, the interface is constantly improving because the developers really listen to what the users want."

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5 Compliance

Schools have always had to comply with state and federal regulations around privacy, accessibility, and reporting. The story doesn't change for institutions that have chosen to implement cloud applications like Google Apps for Education.

Yet some institutions that have migrated to the cloud just assume that their cloud vendors have all grounds covered when it comes to compliance. This isn't true; schools still need to examine the regulations with which they are asked to comply and take action to ensure that their data is appropriately stored, protected, and managed. Imagine that a hacker breaches your network and steals or corrupts the enrollment information you need to report for funding purposes. Without backup and recovery to restore this vital data, you could face serious legal repercussions.

For these reasons and more, backup and recovery for cloud applications like Google Apps for Education has quickly become a best practice for schools and businesses alike. Experts and analysts always include this measure in recommendations on how to best protect cloud-stored data.

To get an independent expert's view on this topic, read the February 2014, Forrester Research Inc. Report, Back Up Your Critical Cloud Data Before It's Too Late: Cloud-To-Cloud Backup Emerges As A Practical Option For Cloud Data Protection by Rachel Dines, Senior Analyst at Forrester Research.

COMPLIANCE: HOW BACKUP AND RECOVERY HELP

You need to keep reliable, accessible, and private records to comply with state and federal laws, and in order to receive the funding your school needs to thrive.

Backup and recovery software guarantees that a trusted copy of your most important information can be found at any time. It also helps you meet requirements regarding the safekeeping and availability of data.

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**SPANNING BACKUP
USER STORY:**

BLAKE SKIDMORE
The Second Baptist School

Organization size: 1,100
School type: PK-12

▶ **Value of backup and recovery:**
Avoiding a past bad experience. We have lost a large amount of important data before. There were several computers that were infected with a virus years ago, and it wiped out entire machines. We were able to recover some of the data, but not all of it.

▶ **Using Spanning:**
During the trial process, one of the administrators lost some important data, which Spanning Backup was able to quickly recover. They've been a customer ever sense.

▶ **Favorite feature:**
A user-friendly interface that provides important data at a glance. The ability to quickly restore a single piece of information or everything. Automatic backups that you hardly have to think about.

▶ **The moment of truth:**
We actually had to use Spanning again this morning; one of our employees lost an email they needed to send out, and they were able to retrieve it themselves in under a minute with guidance on how to recover emails. She was elated and will be showing her department the service.

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Finding the right solution
for your school

Now that you understand the importance of backup and recovery for Google Apps for Education, it's time to start considering the best solution for your school. The provider you choose should provide you with an optimum balance of simplicity, power, affordability, and support.

WHAT TO LOOK FOR IN GOOGLE APPS BACKUP SOFTWARE

Use the guide below to help you evaluate cloud backup and recovery solutions and to find out how Spanning Backup strives to meet your needs.

FEATURE	WHY IT'S IMPORTANT	HOW SPANNING DOES IT
Automated backup	With so many responsibilities, you'll want a backup solution that automatically backs up your data. This will give you the peace of mind that your school's information will remain protected and accessible, and allow you move on to more critical strategic activities.	▶ Daily, automatic backup of Gmail, Drive, Contacts, Calendar, and Sites that you can "set and forget," when you need to
Flexibility	You'll want to know that you can trust your solution to do its job without your attention, but you may also desire a high level of control over your data. A good backup and recovery solution will let you back up your information whenever you choose, as well as choose the volume of data you want backed up.	▶ On-demand backup in one click to initiate backup whenever you want ▶ The ability to restore one file, several, or entire account
Scalability	Since schools, colleges, and universities can have networks of thousands – even hundreds of thousands – of Google Apps users, it is critical that your backup solution is capable of supporting each and every one of your users at scale, including backups, exports, restores and even managing users and settings.	▶ World-class infrastructure backed by EMC ▶ Spanning API to manage user licenses and exports ▶ Multiple Admin Roles to support large numbers of users

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FEATURE	WHY IT'S IMPORTANT	HOW SPANNING DOES IT
Ease of use paired with powerful recovery	The best backup software will "just work" exactly the way you expect it to and let you recover what you need quickly and easily in a moment of crisis. The more fine-tuned the restore capabilities of your software, the better your experience will be, because you can get back to what matters in no time, and without reading a complicated manual.	▶ The best user interface on the market; it's intuitive and simple to navigate ▶ Allows you to search and restore files by date or title ▶ Self-service recovery that's so easy every user can restore their own data in just a few clicks ▶ Retention of meta data (like file structure and sharing settings) upon recovery ▶ Point-in-time recovery that let's you restore any historical version of a file ▶ Cross user restore that allows admins to access another user's account
Easy deployment and support that won't cost extra	Your time is precious, and you shouldn't spend too much of it on non-mission-critical work. Your backup software should take little time to implement, and little time to manage. You shouldn't have to spend time on the phone with an account manager to walk you through your backup and recovery experience. It should be straightforward enough to execute quickly yourself, so you can move on to other things.	▶ 54 second installation ▶ Video tutorials ▶ A product so efficient that you won't need to pay an account executive to walk you through it and help you manage it ▶ Email support and FAQs that let you address any issues without all the fuss; if you're having a problem, chances are, we've already found the solution and added it to our helpful FAQ page, which you can access at your convenience to address your problem right away
Security credentials	Your school generates loads of critical and often sensitive information and intellectual property. You need a provider that will ensure the integrity of your data by maintaining world-class security standards.	▶ SSAE 16 SOC 2 Type 1 audit compliance ▶ Strong encryption ciphers, including 128-bit SSL and 256-bit AES ▶ Intrusion detection ▶ TRUSTe privacy and security seals ▶ US-EU and US-Swiss Safe Harbor Frameworks certifications
Transparency	Backup providers should give you meaningful insight into your data and your backups. Look for a solution that will notify you if there are any errors in your backups as this can mean a file has been corrupted (perhaps by hackers). If the provider you choose doesn't tell you when something isn't backed up properly, you will assume everything is fine until you try to recover a file and are disappointed. It's better to know in advance when problems arise, so you can understand why your data isn't being backed up and can address the issue before it's too late.	▶ Advanced status monitoring including backup history for each user and the entire domain ▶ Email notifications that summarize backups and alert you to any errors that need attention ▶ Alerts for any issues with your backups, plus detailed error reporting and error-correction instructions

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FEATURE	WHY IT'S IMPORTANT	HOW SPANNING DOES IT
Unlimited storage	It's hard to anticipate how much data each user in your domain will produce; some will require ample space for large files while others may need very little. Because assigning a limited amount of storage to users and purchasing more when they exceed limits is time-consuming and diminishes productivity, it's wiser to buy an unlimited storage plan for all users. This way, you never have to worry about buying more storage or sorting through emails and files to delete and make room for more.	▶ Unlimited storage for each user in a private, secure sector of AWS ▶ An affordable, consistent rate per seat no matter how much data is produced
Empathy for educators	You want to work with someone who understands your unique needs and limitations. Look for a provider with experience specifically with Google Apps for Education, dedicated education specialists, and an understanding of your budget constraints.	▶ An over 60% discount for education users ▶ Education specialists that will ensure the best possible experience from purchase to deployment and using our product

In this report, you learned that:

▶ Data loss can and does happen in the Google Apps environment.

▶ There are a few distinct threats to your critical information, but these can all be mitigated by a backup and recovery solution that will keep your data accessible at all times, even when original copies are lost or compromised.

▶ Administrators, faculty, staff, and students all need backup for the work they produce; it's the hard work of these individuals that defines the quality of your institution, so it should be guarded with care.

With the tools above, you should be able to identify the best backup and recovery software for your school.

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About Spanning by EMC

Spanning delivers the most trusted, reliable backup and recovery for SaaS applications including Google Apps, Office 365 and Salesforce.

Spanning Backup provides automated, daily backups of your application data and the ability to restore any lost or deleted data back into your environment from any point in time. The restore process makes it easy for both application administrators and end users to quickly recover lost or deleted data without calling in an IT expert.

Peace of mind is priceless, but we know schools are constantly being asked to do more with less. That's why we offer an over 60% discount to our education customers. Contact a product specialist to learn more about what Spanning Backup can do for your school at +1-855-295-8111 or visit www.spanning.com.

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