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### The Business of Malware and Your Mobile Device



We often view hackers as creeps who are bent on spreading viruses to disrupt everyone's lives,

perhaps for the sake of anarchy or some extreme ideology. But when it comes down to it, most hackers are in it for the money and are just trying to make a quick buck. In fact, hacking groups may even be more organized than your business!

The beginning of the hacking movement consisted of nerds in their mom's basements working alone.



Read the Rest Online!  
<http://bit.ly/16oTFQv>

## About Directive

We are a technology consulting firm specializing in technology implementation and management for businesses. We're known for providing big-business, Enterprise-Level IT services to small and medium-sized businesses.

Visit us **online** at:  
[newsletter.directive.com](http://newsletter.directive.com)

## Don't Let Technology Sink Your Budget!



The whole point of making a budget is to control costs. All it takes is one surprise to undo all the careful work of budget planning. No department is immune to unplanned expenses, and while it's impossible to totally prevent budget-busting expenses across the board, you can take action to turn many surprise expenses into controllable costs.

Turning the expense of technology maintenance into a controllable expense is exactly what Directive's managed IT services are all about. This is because when it comes to budget-busters, technology is one of the worst culprits. Other budget categories, like personnel for example, are controllable and yield few surprises; not so with technology, it is difficult to plan in which Quarter your workstation will go down.

Your computers and your IT infrastructure are nothing more than complex machinery, just waiting for the worst possible moment to break down and leave you up the creek without a paddle or a smartphone. While you are stranded up Technology Creek in your canoe (the S.S. Budget), you will find yourself being pulled into a tributary called Major Repair Expense Stream. It's times like this when all you can do is go where the current takes you while your budget-of-a-canoe sinks to the icy river bottom.

Land Ho! It's in desperate times like these where Directive will rush to your aid and rescue your budget with our managed IT services liferaft. We can rescue your technology budget

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## Is a Private Cloud Right for Your Business?



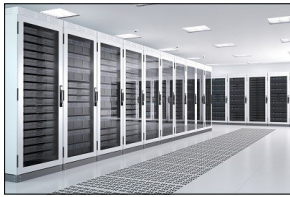
Many businesses are migrating their computing needs over to the cloud. In a worldwide survey, Gartner found that 60% of businesses have increased their budgets for cloud services through 2014. Yet, cloud computing may not be right for every business. For companies that would like cloud services, but may have cloud anxiety, going with a private cloud is a valid option.

If the cloud is as great as the business world makes it out to be, then why would any company not want to participate in the cloud computing craze? While the cloud is adaptable to many different models of business, not every business has the same technology needs. For example, a company involved with the healthcare industry has to be compliant with laws that restrict how patient information is shared. These laws will often restrict a healthcare company from sharing their data over a cloud network that is also accessible to the public.

Other companies may flat-out not trust cloud computing. As every business is well aware, business continuity is dependent upon having your data backed up and secure. For many companies, experiencing a data breach or the loss of sensitive information would be equivalent to a death sentence. While companies that offer cloud computing work hard to make sure their services are secure, there are many companies that don't feel comfortable handing over their data to a third-party, no matter how many precautions are taken. Businesses

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## RAID Formatting Can Improve Server Performance



When it comes to computer memory, redundancy is a good thing. The

more places that you have your data backed up to, the better off you will be if something happens to your hard drive. RAID is a common hard drive formatting procedure that improves server performance and protects your data in the event of a crash.

RAID stands for Redundant Array of Independent Disks. RAID formatting effectively stores your data in different places on multiple hard drives. In every other avenue of life, this type of redundancy would be inconvenient and complicate things (think of how cool-yet-cluttered your life would be with an extra copy of

every possession), but with data, having extra copies spread out over multiple drives will actually improve performance.

The way RAID works is by having the multiple disks on the different hard drives move in sync with each other. The operating system will then look at all the disks moving in sync and see it as one hard drive. With the data redundantly stored on different drives, the server will access the nearest sector of data and be able to find what it needs faster.

Getting your different hard drive disks to sync with each other requires a process called disk striping. Disk striping ensures that the copied data that is spread out across multiple hard drives is done so consistently. The disk striping process will take your data and spread it out evenly across different hard drives in the

form of stripes. The size of the stripes will be dependent on the size of files and how many users access the RAID array. RAID arrays can be categorized into ten major different types. Each type of RAID array is formatted to improve either a hard drives reliability or performance. RAID arrays are numbered 0-through-9, with each array falling somewhere in between the performance/reliability scale.

RAID-0 is an example of a RAID array where the different drives have striping without redundant data backup. Formatting hard drives with a RAID-0 array will dramatically boost hard drive performance, but it will leave you out in the cold if you experience a hard drive crash. The RAID-0 array is not recommended unless you have a reliable backup solution in place, like a BDR from Directive.

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## The Waste of Tape



Every business needs to backup their data. If your company is hit with a disaster,

and there is no backup in place, then it will be a critical hit to your operation. Backing up data with tape is a widely used solution, and while this is better than nothing, it is very inefficient compared to using BDR.

### The Inefficiency of Tape Backup

Backup and Disaster Recovery is a complete backup solution offered by Directive. One of the most appealing aspects about our BDR solution is that it doesn't require you to do anything; every step is automatically taken care of. Our BDR solution is way more efficient than backing up with tape. Tape backup requires multiple time-consuming steps

that may end up costing your business more money than you have originally anticipated.

- **Switching Out Tape:** One of the biggest burdens that come with using a tape backup system is being required to switch out the tape full of data from the previous workday, with a blank tape for the upcoming day.
- **Transporting Tape:** With your backup tape full and switched out, you will now have to transport the tape to storage. This might be a simple task if you store the tape in the same room; but if you follow the best practice of storing tape off-site, then you are likely getting tired of all the extra physical steps that this adds to your daily routine.
- **Tape Inventory and Cataloging:** Your tape full of data also has to be labeled, organized, and an accurate

inventory must be kept. This can be a major time drain.

- **Recovering Tape Data:** If you just experienced a disaster, and your system goes down, then you will be thankful that you have tapes that you can fall back on. However, all of the time that is put into retrieving the old tape, getting your system back online, and restoring the data will count as downtime. Additionally, the recovery of data from your tape backups is excruciatingly slow.

### The Expense of Tape Backup

The reason that companies go with tape backup is because they perceive that it is the economical choice. Today, cloud services and hard disk drives are more affordable than ever, meaning that tape backup is no longer the cheapest route. Additionally, there are several hidden expenses associated with tape backup

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## Is a Private Cloud Right for Your Business?

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that take this approach to data management simply don't want to expose their data to any risks, no matter how miniscule.

For organizations restricted by privacy laws, and businesses that are extra cautious about data security, a great solution that will meet both of these security expectations, while allowing them to take advantage of cloud features, is to build a private cloud infrastructure. Going with a private cloud infrastructure may not be the most economical route, but for companies that desire this level of control over their data, the extra costs will be worth it.

A company building their own cloud network will need to purchase enough hardware to essentially turn their server room into a mini-datacenter. The good news is that you can piggyback off your existing IT infrastructure, but a fully operational private cloud network will still require new purchases such as private cloud management software. If you are considering implementing a private

cloud network for your company, the first thing you will want to do is count the costs.

Building your own private cloud network is a rather large undertaking. Before you commit to such a large project, we encourage you to call Directive at 607.433.2200 and talk with our experienced technicians. With our technology consultation service, we will review what it will take to make a private cloud happen. We can also present to you all of your cloud computing options, just in case there is a different cloud model available that will better fit your needs and budget. For example, using a private/public cloud-hybrid model is a great way to economically take advantage of the convenient cloud features, while letting you migrate the more expensive cloud services over to a public cloud.

If you make the decision to implement a private cloud, then Directive can assist you with every step of the process. We can help you design a customized private cloud solution that will be a best fit your company's needs and security goals. We

will work with our vendors to find you the best prices for cloud hardware and software. Directive can even handle the installation work; this will guarantee that your new private cloud will be set up correctly.

One big reason that many companies choose a public cloud service over having a private cloud in-house is because of maintenance expenses. With the private cloud, you are 100% responsible for maintaining it. Directive can also assist you with network maintenance to help bring your expenses down. With our remote monitoring and maintenance service, we can remotely perform routine maintenances and take care of issues that bog down networks before they turn into problems. We also have IT service packages that can be customized to fit your company's needs and budget. To learn more about the cloud and discover which cloud computing model is right for your business, call Directive at 607.433.2200.



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## Don't Let Technology Sink Your Budget!

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by turning IT repair into a flat-rate that can be budgeted around. This means if a computer goes down (and they will), then all you have to do is give Directive a call at 607.433.2200 and we will float on down and provide a fix. Since our managed IT services are delivered as a flat-rate monthly expense, this means that your repair costs will already be taken care of. Therefore, you won't have to hesitate about putting in a service call due to worry over getting slammed with a repair bill that will sink your budget.

The repairs covered in the service agreement include some of the worst technology budget-busters known to offices up

and down the river. A downed server, a workstation the freezes up, or whatever other technology hazards that dam up operations and cause downtime, these expenses are all covered.

Our service agreements are also flexible, which means if your technology infrastructure expands and you need to add more users, then we will work with you and your work with your budget in order to give you a precise figure on the expense your organization will have to take on. This way, you can accurately budget for expansion.

At Directive, we know about budgets because we too operate on a budget to

run our business. We understand that a big part of running a business is finding new ways to control expenses. Because technology is so interwoven into every aspect of business, it has traditionally been one of the biggest office budget-busters; but thanks to managed IT services from Directive, you now have the means to reign in an uncontrollable expense! To learn more about how Directive can save your budget, give us a call at 607.433.2200.



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## RAID Formatting Can Improve Server Performance

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RAID-1 is a popular RAID array where the two drives mirror each other with the data written identically on each hard drive. These two hard drives are commonly referred to as a "mirrored set." The advantage of RAID-1 is that it improves the speed at which your computer reads data, since either disk can be read at the same time. The disadvantage

of RAID-1 is the speed at which your data is stored on your hard drive (write performance), remains the same as a non-RAID hard drive.

If you want to implement a RAID array for your server's hard drive and increase the performance and improve reliability, then call Directive at 607.433.2200. We will take

in consideration the computing needs of your organization and suggest which RAID configuration will be best for your company. You can even do more exciting things with RAID formatting when you add even more hard drives! Call Directive to learn more.



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We partner with many types of businesses in the area, and strive to eliminate IT issues before they cause expensive downtime, so you can continue to drive your business forward. Our dedicated staff loves seeing our clients succeed. Your success is our success, and as you grow, we grow.

## Servers and Energy Costs are Shrinking with Microservers

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that companies may not have considered when they originally signed up for it.

- **Tape Replacement Costs:** With a BDR solution, all of your data is stored on a server off-site. With tape backup, you need to routinely buy blank tapes. The total costs from all of these tapes will add up, and your wallet is one thing that cannot be backed up.
- **Tape Data Integrity:** The data stored on tape only has a life cycle of roughly 2 years. After that, the integrity of your data is not guaranteed. This

means that if there is an old tape that contains information that you value, you will have to buy a new tape and copy the information sometime before you hit the two year mark.

- **Tape Maintenance Costs:** Remember all of those extra steps of inefficiency that we previously mentioned? When your staff goes through all of those steps in order to maintain a tape backup system, they are most likely on the clock and getting paid.

The Backup and Disaster Recovery solution from Directive

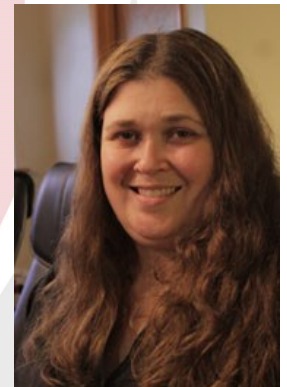
has been designed to improve upon the inefficient and expensive shortcomings of backing up with tape. The best part of BDR is that everything is automated! This means that not only is BDR a more affordable and more efficient backup solution, but when using BDR, you will be empowered to sit back, focus on your business, and not have to worry about data loss. Call Directive at 607.433.2200 for more details on how you can back up your company's data with the best solution on the market!



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