

The IT Manager's Essential Guide to Preventing Downtime

10 Reasons to Cut Downtime and Sleep Better at Night



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About NSK, Inc.

NSK Inc is an information technology consulting and outsourcing firm, specializing in small and medium business IT management. Headquartered in Boston, MA, NSK offers an array of IT services including managed monitoring and maintenance and Cloud Computing technologies.

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Part 1: Downtime is Expensive (and Nobody Has Patience for it Anyway)



With the pervasiveness of technology in our daily lives, it's no wonder that the same standards to which we hold our personal technology providers (read: Facebook, Gmail, Pinterest and others) are being applied to our business technology resources (the ERP system, sales order applications, financial and accounting databases, business email and others). Application downtime, simply put, is no longer tolerated.

Yet the fact remains that the risk of downtime due to natural or man-made disasters, small accidents, elective blackouts or malicious intent grows exponentially each year. In fact, the real causes of downtime might surprise you: Hardware and

network failures lead the way with natural disasters causing only 5% of corporate downtime¹.

It's a paradox: As we become increasingly dependent on technology, the costs and stakeholder frustrations associated with downtime increase right along with the causes (and likelihood) of a significant downtime event. It's enough to give IT managers and business executives chronic insomnia – and for good reason. Aberdeen reports that North American corporations lose \$26 billion annually due to downtime events.

If the social and market pressures of downtime aren't enough, the financial



DID YOU KNOW?

According to a 2013 study, the most common causes of downtime are:



55% Hardware failure



22% Network failure



18% Software failure



5% Natural disaster

1. Continuity Central, The top causes of downtime explored, Q1 2013

facts are staggering: Aberdeen Group recently reports that the average loss for a small business is about \$8,581 per hour of downtime, while for large organizations the average downtime costs are more than \$686,000 *per hour*². When you consider it can take days or weeks to replace a server, or get another server up and running at an alternate location, you can see why many businesses (and IT managers) are crippled by extended periods of downtime.

High Stakes for Regulated Industries

While downtime is expensive for organizations of any size, regulated businesses have even higher stakes. Regulations such as HIPAA,

Sarbanes-Oxley, FINRA, GLBA and others require some organizations to keep critical applications and data available no matter what. Regulations multiply every year and fines for IT non-compliance cost industries billions of dollars. Recently, global security provider Northrop Grumman had to hand over a \$5 million fine to the Commonwealth of Virginia as a result of network downtime that took a week to resolve. Violations can even put the organization at risk for total shutdown.

The responsibility to keep an organization compliant and online around the clock put IT managers under tremendous scrutiny and pressure.



Yearly cost of downtime for organizations of all sizes³

2. Aberdeen Group, Downtime and Data Loss: How Much Can You Afford?, August 2013

3. Aberdeen Group, 2012

Part 2: Costs of Downtime



Downtime has both direct and indirect costs. While the direct costs may seem a little more obvious, the indirect costs can be just as staggering and jaw-dropping.

First the direct costs:

Lost Revenue

The Aberdeen Group report just cited pegs the average cost of lost revenue for each hour of a downtime event at around \$138,000 an hour, but there are other direct costs associated with lost data and access. These include lost employee productivity, fines, and equipment replacement.

Lost Productivity

When data is lost, it's likely that some of it can never be recreated. If it can be recreated, staff will have to spend a significant amount of time backtracking and doing rework. And in today's technology focused workplace, employees who can't access critical data and tools find it nearly impossible to be productive offline. In other words, if your servers are at a standstill so are your employees and the rest of your business.

Fines and Replacements

Other direct costs of downtime may include stiff fines for violated SLAs or non-compliance for losing data, interrupted access to critical applications and data, or inability

Bonus Tip

AVOIDING DOWNTIME

What you need to know to mitigate the risks of application downtime.

While it's impossible to anticipate and prevent every cause of downtime, it's smart to analyze what historically causes downtime, compare those vulnerabilities to your own business processes and infrastructure, and then take steps to mitigate the risks.

Hardware failures lead the way as the most common cause of application downtime. The best answer is a secure, reliable solution that ensures all your files, applications and systems are constantly protected

and rapidly retrievable, even when restoring to dissimilar devices.

If you need the ability to rapidly switch over to a backup server that houses an up-to-date copy of your applications and data, a cloud-based offsite backup allows you to resume business operations from an alternate location in the event of a network outage or regional natural disaster. This structure can be set up to allow employees to continue working from any cloud-connected device in any location.

to provide electronic audit trails for changes to systems or data. On top of this, there are often costs from lost transactions, emergency software and hardware replacement, and overtime or vendor costs to get things running again. Once the dust settles, you may find even more direct costs associated with lost inventory and expedited shipping costs required to make things up to frustrated customers.

Although the direct costs of downtime can cost thousands to millions of dollars per hour, the indirect costs incurred from reputation damage, frustrated employees and lost customers are typically orders of magnitude above direct costs.

Unhappy Employees

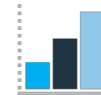
A recent survey by Axcient reported that 72 percent of IT managers said they'd been interrupted on vacation to solve a downtime problem. Twenty percent of that group said their vacations were either cut short or entirely ruined by a downtime event, and in some cases, the vacation disruption impacted their personal relationships. IT managers aren't the only victims of downtime; you'd be hard pressed to find a system administrator who hasn't spent a holiday or a weekend in the server room trying to revive a damaged piece of equipment before the costs really start to escalate on Monday morning.



FAST FACTS



\$12,500 Cost of downtime for a single server for a business with fewer than 100 employees



72% Number of IT managers who reported an IT interruption while on vacation



\$138,000 Estimated cost of lost revenue per hour of downtime

If you think back to the last time your company experienced downtime, even if it was just a Web or email server, consider who took the full force of the organization's frustration. Everyone from the CEO to the receptionist casts a disparaging eye on the IT department while it rushes to resolve the cause of the downtime amid a flood of helpdesk emails and angry phone calls from frustrated stakeholders.

To make things worse, the company that experiences significant downtime can lose talented and valuable IT workers who are left holding the bag. Good IT people know that affordable technology exists that can keep them out of the server room on

weekends and during their vacations (as well as out of the way of angry mobs of coworkers and customers); therefore, organizations that don't take advantage of modern technology risk sending the message to good IT people that they don't value work-life balance for their employees or that they're willing to sacrifice them as scapegoats during downtime events.

Jury Rigged Storage

As soon as tech savvy employees start to distrust IT to keep their data secure, they begin implementing their own solutions. When employees store proprietary files on free online storage such as Dropbox, they leave the company at risk for data



DID YOU KNOW?

A study by DTI/pwc⁴ showed that **7** out of **10** small firms that experience a major data loss go out of business within a year.



4. Contingency Planning, Strategic Research Corp. and DTI/Price Waterhouse Coopers, 2004

loss and cybercrime. Alternatively, employees frequently start saving critical files to laptops or flash drives – equipment that is easily damaged and susceptible to loss and theft.

Lost Ideas

Every industry has some creative component and most proprietary ideas are stored on the company's servers. Consider the creative costs of data loss to an architecture firm that loses weeks or months of AutoCAD drawings, or a graphic design group that loses blocks of art files. If a server is destroyed and data along with it, it's nearly impossible to duplicate yesterday's creative spark. Kenneth Mok, Director of IT for award-winning architecture and

design firm Rockwell Group, says that any disruption to IT access "could easily cost millions of dollars in lost billable hours."

Brand damage

With the ubiquitous use of social media in the marketplace, downtime will likely result in nearly instant damage to your reputation and brand. Bad press is a problem in any form, but today, bad press becomes part of your permanent online story. It's also hard to calculate the cost of lost opportunities or customers who simply went to a competitor while you were offline. Public corporations can easily see their stock value decline in direct correlation with a downtime event.



"If a server is destroyed and data along with it, it's nearly impossible to duplicate yesterday's creative spark. Any disruption to IT access could easily cost millions of dollars in lost billable hours."

– **Kenneth Mok**
Director of IT
Rockwell Group

Part 3: Calculating Your Downtime Costs



There's no shortage of news stories about how downtime cripples businesses. However, stories aren't usually enough to build a business case for implementing an effective solution. The first step in building your case is to estimate the cost of downtime for your particular organization and detail its unique needs and functions.

Start by identifying the critical business functions that drive your core business. For example, if your email servers are down can your core business still function or does business come to a standstill? What about Web servers? How about servers that host CRM applications? Once you've identified these,

calculate the cost per hour of each area being offline. For example, you can calculate labor costs by multiplying the number of employees affected by downtime by their average salary (with benefits) per hour. Calculate potential revenue loss by dividing the gross yearly revenue by yearly business hours.

Continue estimating through each functional area of the business that would be affected by downtime. And don't forget to add in estimates for declines in credit rating and stock price (if applicable). With this you have a reasonable picture of what the direct costs of and hour of downtime for your organization.



FAST FACTS

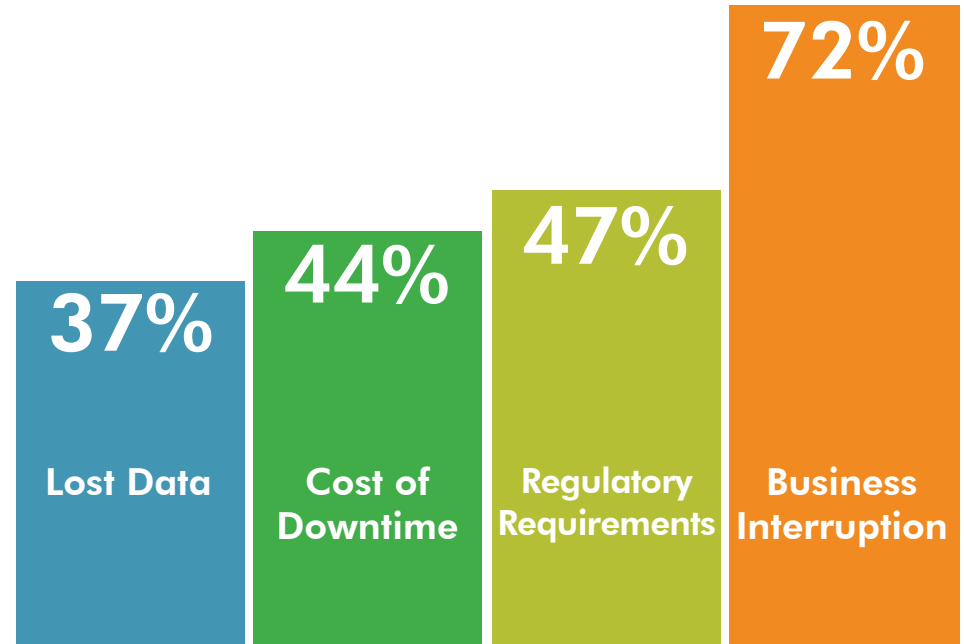
Calculating Your RTO and RPO

Downtime costs for critical business areas are calculated in relation to the company's Recovery Time Objective (RTO) and Recovery Point Objective (RPO). RPO is a calculation of how much data you can afford to lose; in other words, the amount of data that needs to be recovered after an outage. RTO is a calculation of how quickly your critical data and applications need to be recovered.

Finally, identify the indirect costs of downtime as they relate to each functional area of the business. You can use [Axcient's free online cost of downtime calculator](#) to help make a solid estimate.

When you are able to see the bigger picture, you'll be able to quantify the financial benefit, as well as the primary motivations, for making the investment to eliminate downtime.

A recent study shows that most organizations are primarily concerned about the risk of business interruption, followed by regulatory requirements, the financial impact of downtime followed by the loss of critical data.



Primary motivations for eliminating downtime



FREE ONLINE DOWNTIME COST CALCULATOR

To make it easier for you to calculate your own cost of downtime Axcient has created a simple [online calculator](#) that walks you through a handful of questions and gives you an estimated cost of downtime. Once you see the results, you can drill down into the assumptions and industry standards we use and fine-tune it to fit your business.

Part 4: Calculating the Cost of Your Current Solution



If you have a backup solution in place today, there's one more exercise that may help you build a business case for a modern downtime-reduction solution, and that is to calculate the cost of your current backup solution.

These points will give you an idea of the total cost of ownership (TCO) calculation of your current solution. When you add your current TCO to your estimated cost of downtime per hour, you'll have a solid case for acquiring and implementing a solution that cuts downtime and data loss.

CALCULATING TOTAL COST OF OWNERSHIP (TCO)

1. Estimate what it costs the organization for the IT manager to backup all data using your current tools. Is someone still wasting time switching tapes and transporting them to offsite storage?
2. How much time does staff spend testing restore points to ensure data can actually be retrieved if needed?
3. How much time does your staff spend reviewing backup logs and verifying backups completed successfully?
4. Are you 100% sure you can restore all of the data required?
5. If you can't run a full disaster recovery test without affecting production systems, how much does slowed productivity or downtime cost you?
6. How much downtime does your "backup window" cost you every day? How many hours does that translate into per year?
7. What are your current RTO and RPO points? Are they sufficient?
8. What does it cost your organization to stay compliant with regulations related to secure backup and off-site storage?
9. If an employee loses a laptop, what's the cost of the lost data stored on their hard drive? What are the actual and potential costs of the security risk?

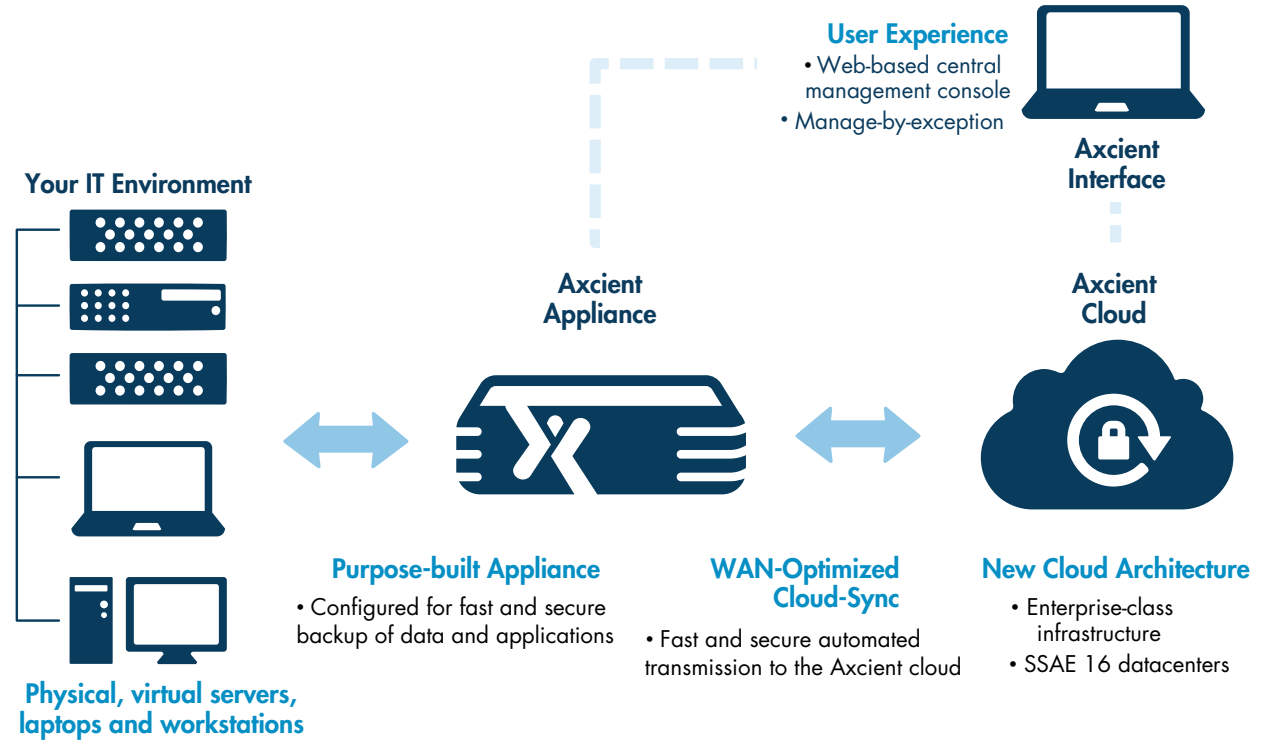
Part 5: The Axcient Solution



Axcient delivers the first and only comprehensive integrated platform for backup, business continuity, and disaster recovery that is purpose-built for the cloud, managed as a service, and affordable for companies of all sizes.

How it Works

Axcient offers a hybrid solution: your data is stored locally on an onsite HP-based appliance for fast backup and restore, and also securely replicated offsite. In the event of a server outage, you can failover servers on the Axcient platform with a single click until the new hardware is ready. Your data is protected in the event of fire, theft, sabotage, hardware failure or natural disaster in our secure, offsite cloud-based datacenters.



What's New

The all new Axcient is faster and easier to use than ever before.

Our unified Web interface makes it easier for IT managers to manage data protection issues with three key features: exception-based notifications, customizable alert thresholds and a health status system that lets you see your entire enterprise at a glance. With 60x faster offsite data transfer speeds and a storage performance increase of 4x, customers are confident that their data is fully protected and available.



New Service Performance

- 60x faster offsite data transfer
- 35% faster onsite data transfer
- 90% less network chatter



New Cloud Infrastructure

- 4x increase in storage performance
- 66% less power consumption
- Faster data access for failover and recovery



New User Experience

- Unified web interface for control and access
- Automated instant setup of protection
- 90% less time to manage



New Hardware Appliance

- 50% more compute and 2x RAM
- Upgradable memory and storage
- Enhanced remote diagnostics

Part 6: The Axcient Difference



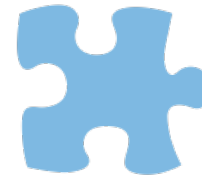
Vs.



Backup



Disaster
Recovery



Business
Continuity



WAN
Optimization



Dedupe

The Axcient solution is different from other backup and recovery solutions because it is an integrated solution enabling IT departments to receive all the capabilities listed to the right on one platform, from one vendor. It's also designed to be easy to use (even for non-technical staff), is affordable and powerful, and reliable enough for enterprises:

-
- RISING ABOVE THE REST*
-
- Image backup and Bare Metal Restore (BMR) of laptops, desktops, and servers
 - Backup and restore for Windows®, Linux, and Mac OSX machines concurrently
 - End user or administrator driven data recovery
 - Anti-corruption technology to ensure health of backups
 - Configure frequency of disk image protection
 - Backup and BMR of virtual servers (VMware, Microsoft Hyper-V, and XenServer)
 - Create complete server or desktop disk images to restore to different hardware
 - Get failed servers and applications running in minutes with a single click
 - Failover a physical or virtual server to the Axcient onsite appliance
 - Failover to a virtual office in the Axcient cloud
 - Customizable scheduling and retention policies for compliance and archiving
 - Patent-pending reverse incremental technology enables fastest possible restores
 - Test failover capabilities without impacting production environment
 - Restore back to the replacement server at your convenience
 - No hardware to purchase or software agents to install or manage

Building a business case for a modern technology solution that eliminates downtime and data loss is easy when you consider how a landslide of direct and indirect costs of application downtime can affect your organization.

The Axcient solution offers unprecedented simplicity and uptime. Axcient protects your data and applications in multiple ways to ensure you will never suffer a day – or even a few hours – without the critical information systems you need to run your business.

10 REASONS TO CUT DOWNTIME WITH AXCIENT

1. Downtime is very, very expensive and 70% of organizations never recover from a downtime event.
2. IT managers who get a full night's sleep or an uninterrupted week off make happier employees.
3. IT managers who aren't getting yelled at by co-workers and C-level managers are also happier employees.
4. You won't have to break into a sweat when someone says "the auditors are here."
5. IT managers and staff who get bigger bonuses or increased profit sharing because the company has lower expenses are happier and more likely to stay with the company.
6. Employees who don't have to constantly deal with downtime are less frustrated, more productive, and more likely to stay with the company.
7. When employees aren't relying on ad-hoc file saving systems like Dropbox for backup, corporate security is improved.
8. You never have to deal with entire Facebook or Twitter pages full of angry comments about your site being down. Again.
9. You won't lay awake at night worrying about fires, hurricanes, floods, or spilled Big Gulps.
10. You won't have to wonder if your restore will work if something happens to a server.