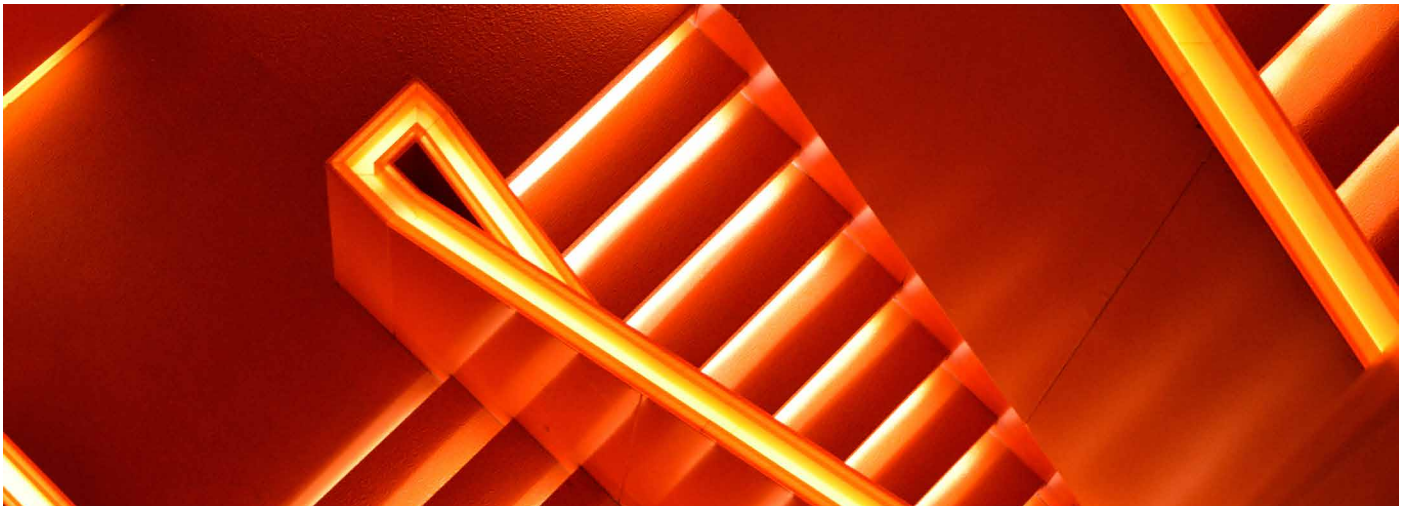
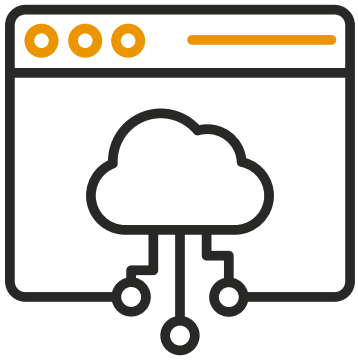
How to minimize the impact of cloud outages on your business with real-time monitoring.



CLOUD OUTAGES. AN OBSTACLE TO GROWTH?

Executive Summary

Now more than ever successful companies rely on the cloud to conduct business.



Nowadays, businesses rely on both modern production and relevant communication processes to get work done more effectively.

Employees of large and small companies are working across departments and across continents 24 hours a day, 7 days a week. Being able to effectively process and secure data is essential for measuring project progress, adhering to timelines and ensuring the best possible outcomes.

Over the past few years, the popularity of cloud computing has snowballed, and it is boosting the power of the internet more than ever. And with all the benefits it provides, the cloud is becoming vital for companies across the globe, primarily to enable IT to meet the increasing business demands for speed, agility, and responsiveness.

Not knowing the full extent of how a cloud outage could potentially impact business is a risk very few organizations can afford to take.

Often organizations are seeing two sides when they talk about the term 'availability' of cloud services. A service IS available or is NOT available.

But there are other parameters which play an important role:

- How efficient and reliable is the performance of the available service?

and in case of an outage

- Is the entire organization affected or only a subset of it? What impact does the outage have in my day to day business operations?

This paper uses recent examples of cloud outages to provide an overview of their potential impact and what can be done to minimize the risk to your company.

WHY CLOUD? WHY NOW?

Cloud platforms have become indispensable to the success of modern businesses

The cloud is becoming a vital part for enterprises across the globe.

According to the 2018 IDG Cloud Computing Study[1], published by IDG Communications Inc., top business goals or objectives most responsible for driving investments in cloud computing initiatives, are

- improving the speed of IT service delivery (71%),
- increasing flexibility to react to changing market conditions (63%),
- enabling business continuity (58%), and
- improving customer support and services (57%).

Equally relevant is that nine out of ten companies will have some part of their applications or infrastructure in the cloud by 2019, and the rest expect to follow by 2021.[1]

More technology-dependent industries including manufacturing, high-tech, and telecom are being led by executive management to become 100% cloud.[1]

You've certainly heard reports about how cloud computing helps corporations archive and access their files, streamlines the processes for logistics and development teams, and allows employees better collaborate to access

9 out of 10

companies will have some part of their applications or infrastructure in the cloud by 2019.[1]

77%

of enterprises have at least one application or a portion of their enterprise computing infrastructure in the cloud.[1]

58 % of enterprises say it's important to them to enable business continuity.[1]

58%

of companies state that it is particularly important for them to ensure business continuity. [1]

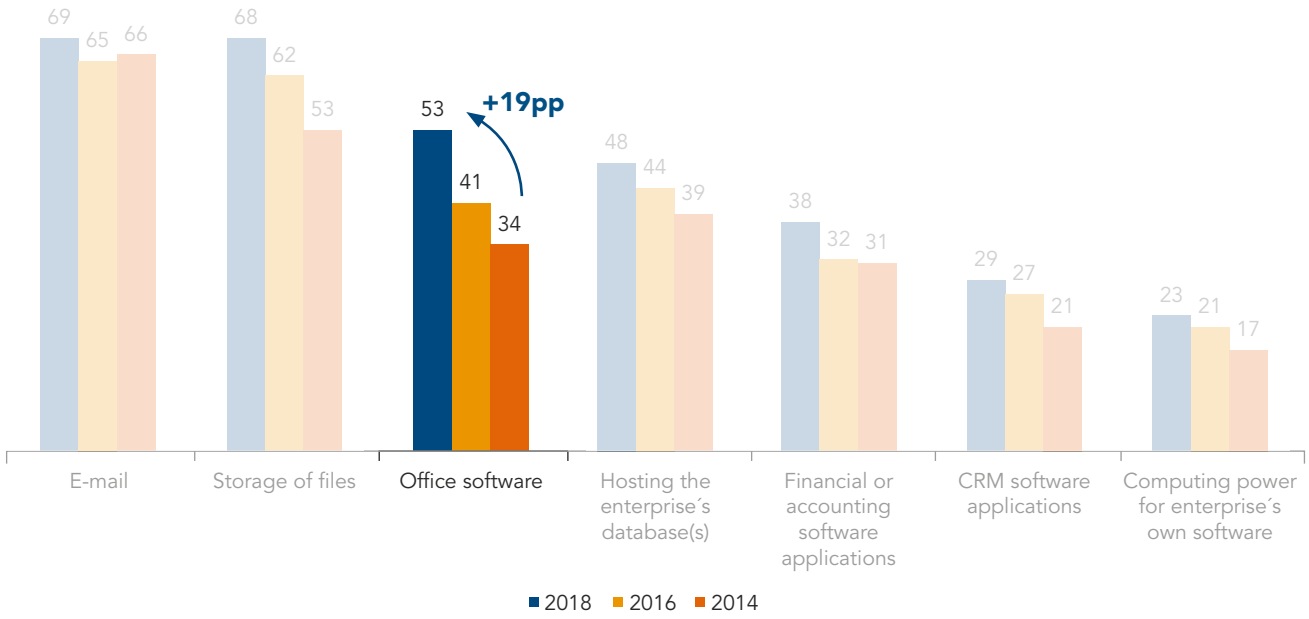
identical data about customers whether they're stationed in San Diego or Sydney.
There is no doubt cloud computing services may meet a wide range of other business needs in order to create new markets. The article 'Cloud computing - statistics on the use by enterprises', published by Eurostat, Dec 2018 [5] presents recent statistics on enterprises' use of cloud computing services in the European Union (EU).

In 2018, the use of cloud for email and storage of files is still predominant. The use of office software has recorded the highest growth (+19 percentage points) since 2014 among all purposes.
There is no doubt lots of businesses are starting to unlock the true business potential of modernizing their IT infrastructure by embracing the Cloud. And those who haven't just yet are clearly lagging behind at rampant costs.[5]

The use

of cloud office software has recorded the highest growth (+19pp) in European enterprises since 2014 [5]

Use of cloud computing service in enterprises, by purpose, 2014, 2016 and 2018 (% of enterprises using the cloud)



Source: Eurostat

WHERE THERE IS LIGHT, THERE IS SHADOW!

Can enterprises live without cloud service for 87,6 hours?

Data availability and business continuity

With all of that said, whether it is due to a human error or natural disaster, when it comes to cloud, one can always expect outages.

No service, not even the cloud, can guarantee 100% uptime. When you rely on a cloud service for a business-critical task, then you are putting the viability of your business in the hands of two services: the cloud vendor and your internet service provider (ISP). At your own risk.

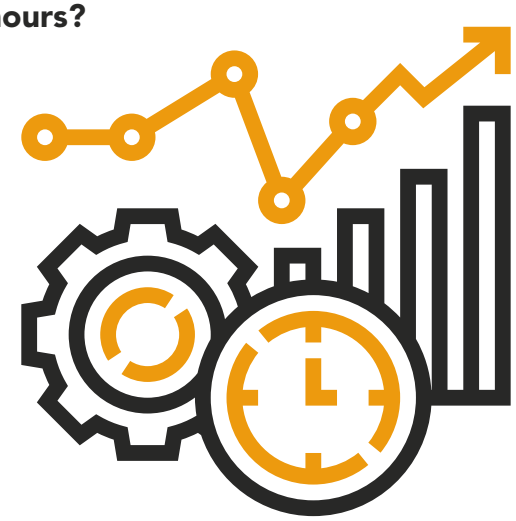
If your internet access goes down, then it will take your vendor's cloud service with it. If you need the cloud service to process customer payments or access important data, too bad – you have to wait until the internet is back up.

Another cloud risk is that the vendor can go down as well. Anything from bad weather, DDoS attacks, or a good old system failure can knock the service unresponsive.

How much uptime can a cloud vendor provide? 99%? That's great but consider that statistic for a moment.

US$300,000

is the average estimated cost of a one-hour cloud outage in business though it can be more or less depending on the characteristics of the business environment. [4]



99% uptime means 1% downtime. Over the course of 365 days, that's 3.65 days the service can be down. That's equal to 87.6 hours.

US$ 5.600 per minute

That's the cost of downtime proclaimed by Gartner in 2014 [4]. For various reasons, the value can only be seen as a rough estimate. The amount of the costs will vary greatly depending on the size of the company, the business segment and the turnover.

If we multiply the value by the 1% probability of cloud outage, the yearly cost of downtime sums up to roughly US$ 29 million. Even if we reduce the estimated cost to US$ 100 per minute, the annual cost of downtime will still be a massive US$ 500,000.

However, in 2018, the world saw the cloud storage's dark side. Some unexpected cloud outages have hit even the most prominent cloud providers (CSP), causing embarrassment all around. [2]

- Amazon: Jul 18 – prime day
- Google: Jul. 18 – amongst others snapchat, Spotify
- Facebook: 3 major incidents
- Microsoft: Apr. 18, Jun. 18, Sept.18, Nov. 18, Feb. 19 - Office Outlook, Office 365, Azure, Skype for Business

How reliable a cloud-based IT operation is can mean a lot to a company's bottom line and employee productivity.

Downtime potentially has even further reaching consequences; an unexpected ripple effect. Let's face it, in business, reputation is everything. It enables you to hire the best employees for your team, establish long standing customer relationships and encourage investment in your offering.

If your business suffers an outage and your customers feel the effects of downtime, it's unlikely that your brand will escape totally unscathed. Those long standing relationships might suffer, alongside any new business prospects. Who knows? Years later, you could still be feeling the effects.

59 percent of respondents believe that dealing with cloud service interruptions is the primary responsibility of the cloud service provider. Eighty-three percent of respondents also believe that their organization's cloud service provider is responsible for ensuring that their workloads and data in the cloud are protected against outages. [3]

While cloud service providers have service level agreements in place, these are typically for the infrastructure layer and they hold the responsibility for restoring their infrastructure in the event of a cloud outage.

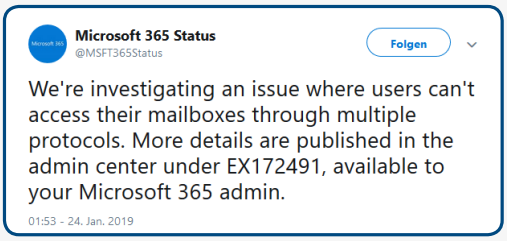
However, there are other key considerations customers should keep in mind that go beyond the actual infrastructure-level outage, such as bringing their applications back online, once the infrastructure is back online. Depending on the complexity of application inter-dependencies during restart and the amount of data lost during the outage, the actual time of application recovery may be far longer than the time of infrastructure recovery. An organization may alternately decide to be more proactive and failover applications back to their on-premises data center or to another cloud. This would be the primary responsibility of the organization, not the cloud service provider.

Not knowing the full extent of how a cloud outage could potentially impact business is a risk very few organizations can afford to take. But, the risks can be severely mitigated with the right business resiliency strategies in place to reap the benefits of embracing a multi-cloud world.

1%

cloud downtime within a year equals 3.65 days and that's equal to 87.6 hours.

3 RECENT OUTAGES WITHIN JUST 2 MONTHS



2019, Jan 24th
Outage scenario 1

Microsoft ID
EX172491

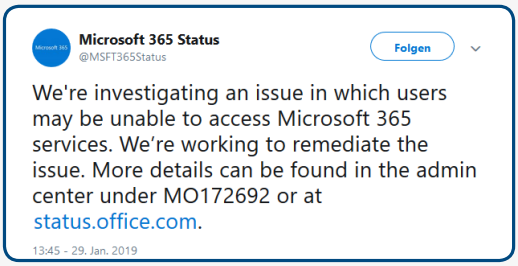
Duration
full day

Affected
Microsoft Office 365, Exchange Online & Authentication

Consequence
Users were unable to access their mail for an entire day

Regions
Europe, Middle East, Africa

https://twitter.com/stonkcat status/1088457077964435456



2019, Jan 29th
Outage scenario 2

Microsoft ID
MO172692

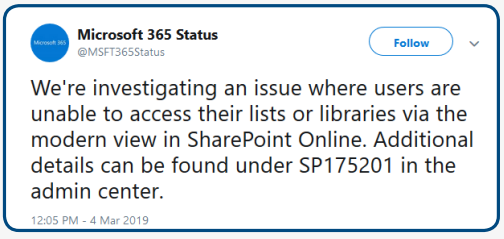
Duration
3 hours

Affected
Office 365, Dynamics 365, Azure Government Cloud, DNS service

Consequence
Users were unable to access Office 365 service and on top URLs from emails

Regions affected
Global

https://twitter.com/MSFT365Status/status/1090365460208472064



2019, March 4th
Outage scenario 3

Microsoft ID
SP175201

Duration
2 hours

Affected
SharePoint Online

Consequence
Users were unable to access their lists or libraries

Regions
Global

https://twitter.com/MSFT365Status/status/1102661314558681088

A US$ 672,000 REAL-LIFE CASE STUDY

In the last example above, real-time monitoring indicated a cloud outage a full 2 hours before the official notification by the CSP. This represents a potential saving of US$ 672,000!

Sharepoint Outage Scenario, Mar 4th, SP175201

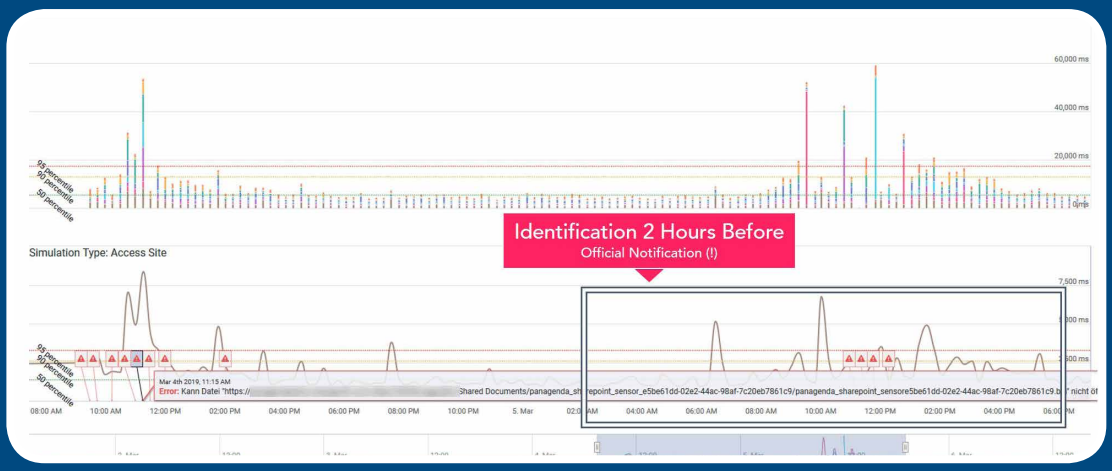


Figure: OfficeExpert, instant detection and indication of inaccessible lists or sites

Reduction of cost risk through real-time monitoring

Let's look at how this figure was calculated:

It usually takes 20 or more minutes for organizations to be informed of and react to a service failure, whether from your own employees or from a CSP. In the example above, however, if proactive monitoring not been in place, it could have taken 120 minutes.

Assuming that 1 minute equals US$ 5,600 loss (Gartner), then 120 minutes would result in a total loss of US$ 672,000.

But, this is just one example. As already seen, there have already been 3 such outages between January and March of this year. This could have added up to over US$ 2 million!

Using a proactive monitoring solution reduces your downtime and associated costs by allowing you to begin to respond immediately.

Expect, but don't accept

So, downtime can carry a heavy price tag, but can it be prevented?

One of the biggest concerns about cloud services is the potential for loss of control and outages, never mind the growing frustration from end-users themselves for not being able to use their digital tools to collaborate and get more work done with their colleagues, customers and business partners. That's why, while cloud services have many benefits and can be a critical part to any business's operations, it is important to have a plan in place to help mitigate the risk of an outage.

Media coverage has pinned blame for the failures on the cloud service providers (CSPs),

but CSPs aren't the only entity on the hook here. Enterprises are responsible for their own disaster planning and recovery procedures, whether they are deploying IT solutions in their own data center, managing their IT with one or more CSPs, or utilizing a hybrid architecture.

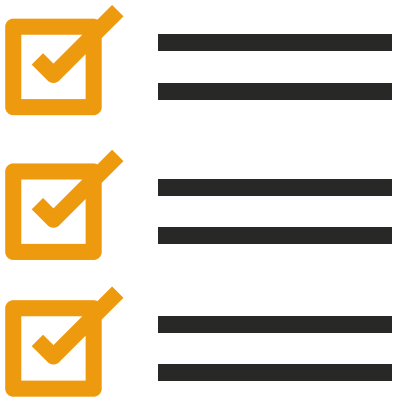
How can companies make sure they get that kind of no news/good news during a cloud outage? Here are some suggestions we can offer for you to consider before the next one happens:

1. Contingency plans > Be prepared

A big part of an IT manager's job is asking, "What if…?" As cloud services become more popular, disaster plans are updated to include contingencies for the moment when the company's cloud-hosted data resources become unavailable. Benefits of having a plan include:

- You will experience far less yearly downtime
- Implementation of the plan will help to maintain your reputation with clients/customers
- It will assist with business continuity, including continuous 24/7 IT support as is often necessary
- It will provide the methods by which you can test your plan
- It will give your organization, especially upper level management, with a sense of security

The method that provides you with the greatest flexibility and recovery speed, however, is a cloud disaster recovery plan. A cloud disaster recovery plan is one that makes use of a public cloud -- such as AWS, Azure or Google Cloud Platform -- to back up data, applications and other resources. Then, when disaster occurs, those resources can be restored from the cloud back to their original locations -- whether those locations are on-premise infrastructure or the cloud.



Another way to describe cloud disaster recovery is to call it offsite disaster recovery because your workloads are backed up to a remote site and can be recovered from there.

It's important to note a cloud disaster recovery plan can be used to back up and restore workloads that run on-premises as well as those hosted in the cloud. You don't have to run your production systems in the cloud in order to take advantage of cloud disaster recovery.

2. Real time monitoring > Saving precious seconds

How will you know if your cloud-based application is having problems? Hopefully, it isn't when you get informed by the CSP or when your employees start calling your support line. You lose extremely valuable time before you can set your carefully planned emergency plan in motion.

Real-time system monitoring, and end-user experience management software are helpful here. But be careful how you deploy these packages; you don't want them to be dependent on the same clouds they are monitoring and suffering an outage right as you need them the most.

Powerful monitoring solutions proactively warn exactly when the loss of connection is evident.

CONCLUSION

Monitoring your IT-infrastructure in real-time is no longer a nice capability to have but a key one.

Businesses must use real-time analytics solutions to help understand how their cloud environment is behaving.

Not only to be alerted ahead of time when different outages may happen, but also to ensure continued access to the digital tools at their disposal. End-users can continue to get their work done with their peers, their customers and their business partners.

Real-time data analytics of your digital tools allows you to work smarter and proactively resolve issues before your end-users even notice. That's why in addition to the financial benefits you would be able to:

- Avoid compromising the business reputation
- Control and customize your own disaster recovery processes
- Keep employee user experience, engagement and overall productivity at the same high standards as ever
- Increase trust in your ability to respond and act accordingly in a record time, from both your employees and your customers
- Validate the company's commitment when coping with failures to both employees and customers alike.

And while you may be wondering, right as we speak, whether your recovery procedures may well be up to date to cope with a potential cloud outage, you may also need to think about what real-time monitoring analytics solution you could tap into in order to help you enter the world of predictive analytics. That's why we at panagenda have put together a beta environment where you could test, free of charge, one of our solutions, OfficeExpert, to help you get up to speed with what's available today. You won't have to install anything to get things start, nor purchase any license. Just take it for a spin, play with it and see how it could apply to your own business.

You never know, the next cloud outage may well be just right around the corner and better to be ready today than to be sorry tomorrow. Let real-time monitoring analytics help you anticipate, clear off the many uncertainties and make your life easier. Your end-users and customers will be thankful, too!

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