



How to master **cloud migration**

WHITE PAPER



Content

1. Introduction.....	3
2. Basics of cloud computing.....	4
3. Why migrating to the cloud pays off.....	6
4. Cloud computing: common fears	11
5. Cloud migration: what to expect.....	15
Working with a migration partner.....	15
Phase 1: Pre-migration	16
Phase 2: Migration.....	18
Phase 3: Post-migration.....	19
6. Conclusion	20



Introduction

Migrating to the cloud is an important and necessary step for companies towards digital transformation that requires a lot of planning: processes need to be thought through, interdependencies considered, security and governance requirements met, and employees led and engaged.

According to the Cloud Monitor 2020 from Bitkom Research commissioned by KPMG, approximately 75 percent of the interviewed companies use cloud computing. This figure has steadily risen over the past five years. A trend that will continue. However, others still hesitate to embark on the same journey. Although they understand the necessity for the cloud by now, they are concerned, cannot visualize the concrete steps, or believe their resources are not sufficient to realize a cloud migration.

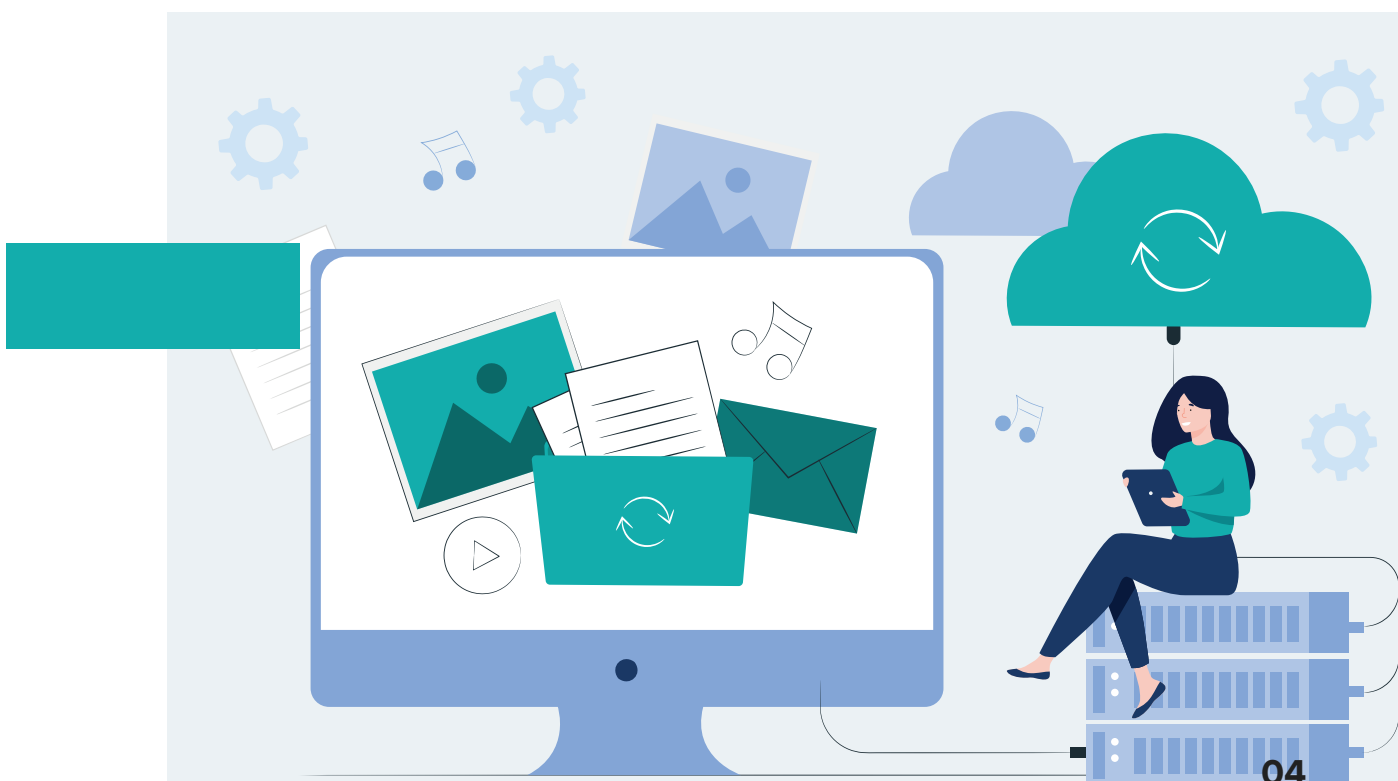
In this white paper, we show you the best way to realize cloud migration in a cost-effective, fast and reliable manner so you and your company can benefit from all the advantages of cloud computing.

Basics of cloud computing

Digital transformation does not work without the cloud. Once you decide on it, you inevitably decide to transform your whole organization, too. Consequently, disruptions will not affect your business as much and it will be able to continue to operate while remaining future proof.

The technically correct term for what is commonly called “the cloud” is cloud computing. It describes the deployment of services and the underlying IT resources on demand via the internet. The migration to the cloud therefore means that software and other IT services are no longer installed on computers locally.

The most common cloud services in the business context are Software as a Service (SaaS), Infrastructure as a Service (IaaS) and Platform as a Service (PaaS).



- **IaaS:** Servers, desktops, archiving systems or storage are rented on a monthly basis. That way, companies do not have to own hardware themselves, can scale better and benefit from higher security.
- **PaaS:** Users rent a combination of hard- and software as platform where Software as a Service runs or where they can develop applications and services themselves – deep infrastructure know-how is not necessary. Scalability is a benefit here, too.
- **SaaS:** Users rent services on a monthly basis. It is not necessary to install software, and the internal administrative effort of the IT department is reduced. The provider takes care of maintenance and updates. The software is scalable and mobile use possible.

There are various **deployment options for the cloud:**



Private Cloud

A private cloud can only be used by one organization. Predominantly, this cloud option is hosted in the company's own data center (on its own servers). It is possible, though, that it is hosted by an external service provider or rented from a cloud provider.



Public Cloud

A public cloud basically can be acquired by any organization from the respective cloud provider. The costs are billed according to the actual use. The best-known cloud providers are Microsoft (Azure), Amazon (Amazon Web Services) and Google (Google Cloud).



Hybrid Cloud

A hybrid cloud is a combination of a private and a public cloud. Here, organizations can decide which services they want to access from the public cloud and which ones they host on their own servers in a closed cloud.

Why migrating to the cloud pays off

If you want your company to be fit for the future, digital transformation is crucial – that is something you read and hear everywhere.



However, when making a decision of such magnitude, you should not rely on what is repeatedly echoed. Therefore, we will provide you with a list of the most important advantages of cloud computing:



The cloud serves as foundation for other innovative technologies.

Innovative technologies such as Artificial Intelligence and the Internet of Things are based on the cloud. Those who use them can also harness the advantages of AI, IoT & Co.: saving costs, promoting innovation, being agile.

“All companies are software companies,” Satya Nadella, head of Microsoft, once said.

What he meant by that: The importance of IT in companies continually increases. In the future, IT will become the basis of all processes. To be suited for that role, it must be flexible, fast, performant, reliable and secure. Only cloud computing can offer all that.



The cloud saves you money.

The numbers clearly speak in favor of the cloud. There are no more costs for servers and connected hardware, their maintenance or expensive software licenses. With a model such as SaaS, you only pay for actual monthly usage. The cloud provider is responsible for security and maintenance. That does not only reduce the costs, but also makes them more predictable.

The advantage of pay per use models is that companies only pay for what they actually use. In case requirements change, licenses can be added or cancelled flexibly and on short notice. This saves unnecessary costs for capacities you do not need.



The cloud gives you access to state-of-the-art technology.

Cloud applications and platforms are constantly developed further. That means fixing bugs on the one hand and adding new features on the other. Once you choose a solution, you do not just buy the status quo, but a solution that is constantly improved.

Microsoft, for example, has two annual release waves when new features are gradually rolled out for all users. Cloud users receive new features and functionalities a lot faster and without any effort than users with on-premises solutions.



The cloud enables mobile applications.

Mobile work becomes increasingly important. Employees do not want to spend hours every day on their commute to work; neither do they want a work life balance that really is an imbalance in favor of work. Organizations must provide their employees with cloud-based software that enables them to work productively from home or on the go. That is the only way they can access all information, applications and storage they need, no matter their location or device.



The cloud nurtures innovation.

Thanks to the cloud, organizations can acquire new applications quicker and at lower costs. The easy access and the intuitive usability of cloud tools like Microsoft Power Apps allow even non-programmers to build their own business applications or at least to design prototypes. And if a project fails, in the cloud it is less crucial, because usually investments and losses are manageable there.



The cloud takes work off of your IT department.

As mentioned before, migrating to a (public) cloud renders your own data centers, server rooms, and certain hardware obsolete. That, of course, means they do not have to be bought, installed and maintained either, and your IT department will be left with more time to focus on more productive tasks directly linked to increasing revenue.

Furthermore, cloud computing makes your IT administration simpler. Especially small and medium-sized businesses that have trouble finding suitable IT staff benefit from that.



The cloud grows with your company.

The cloud is scalable, and many cloud applications consist of modules. That gives companies the opportunity to start off with their biggest challenges and add more and more features if necessary.

This flexibility is also an advantage when the organization grows dynamically. More licenses can be purchased any time. That way you never pay more than you need, and at the same time capacities can be expanded quickly.



The cloud makes your company more agile.

The technological capabilities of the cloud combined with its flexibility makes companies less susceptible to disruptions – whether from a changed market situation, a global pandemic, or other unexpected events. When your processes, and maybe even your products and services are cloud-based, you can react much faster and adapt them to new circumstances.



Cloud computing: common fears

Of course, cloud migration poses a challenge, too – especially for employees who face a lot of changes. Dependencies between different systems as well as special security requirements make these types of projects more complicated.

The most common fears that companies have are:

01

The cloud isn't secure.

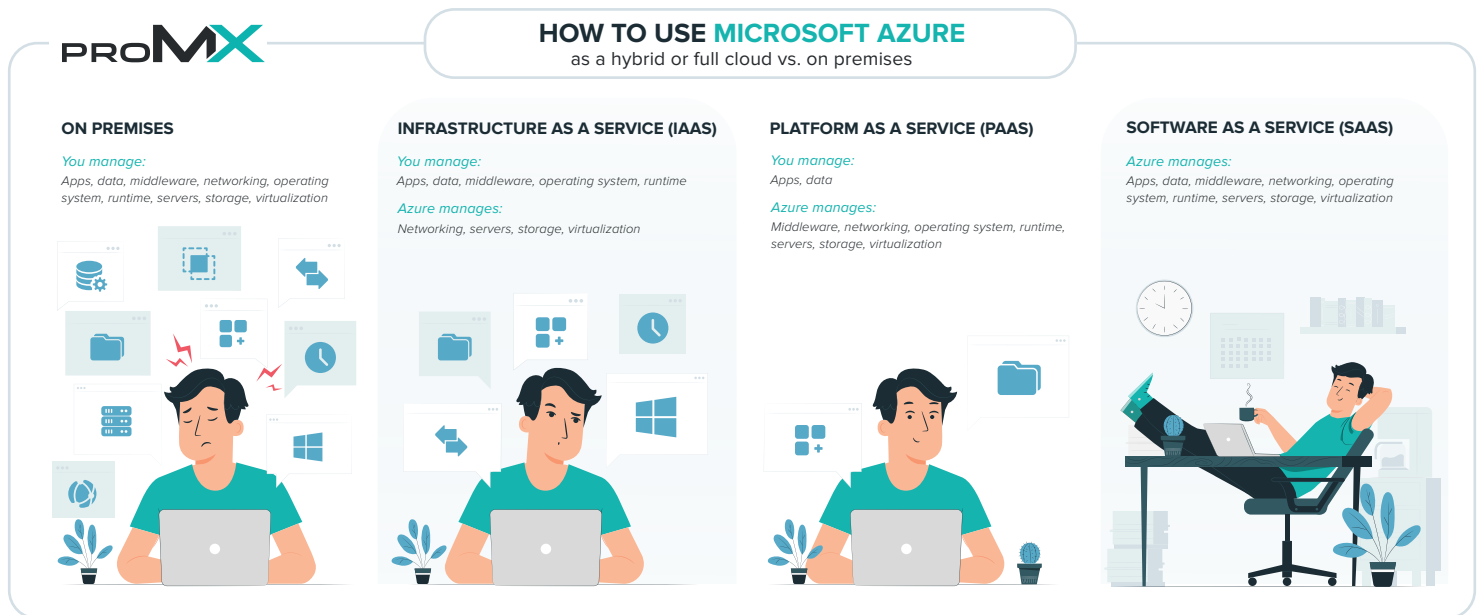
In Germany particularly, there are major concerns about the security of cloud solutions. Companies believe that their data is better protected when it is stored on their own servers as opposed to having it in a public cloud – both from loss as well as from unauthorized access.

The truth is, however, that large cloud providers such as Microsoft, Amazon or Google can invest a lot more in the physical and functional protection of their servers than individual companies ever could. Microsoft states that 3,500 specialists worldwide take care of the security of its Azure cloud platform.

The three major cloud providers are all US-based corporations – a fact that should not unsettle you, though. They still have to meet the data protection requirements of the European Union. Microsoft automatically stores the data of companies based in Germany in German data centers bound by German law. U.S. government agencies therefore cannot demand any data, unless they suspect criminal behavior and a court ordered to hand over data.

If you still have concerns, you can always opt for a hybrid cloud solution and make the decision to leave certain data on your own servers.

In general, a shared-responsibility model between the cloud provider and the customer applies in the cloud business. Both share responsibility for the security of the data, as shown below:



02

Cloud migration is too expensive for us.

The costs of cloud migration vary from project to project. They cannot be estimated 100 % accurately in advance. However, they can be minimized with good planning and an experienced migration partner. The more precise the planning, the less often unexpected costs will arise. Once the cloud is implemented, the costs are usually lower than for maintaining the hardware and software yourself.

03

Our employees will not be on board.

Moving your organization's IT from your own data center to the cloud has a large impact on your operations and your team. Many employees will be skeptical when they first hear that the way they are used to working is about to change. They rarely look forward to new systems and processes.

Resistance is particularly likely to form when employees cannot figure out why change is needed and what benefits a new way of working, new processes or new software will bring. That is why it is highly important to accompany cloud migration with effective change management at an early stage.

04

We lack know-how and resources.

Medium-sized companies in particular are careful to invest in innovative and seemingly complicated technology. They often have the feeling of not having the necessary expertise. But know-how can be learnt from outside the company, and in the long-term cloud migration will make the inhouse IT's life easier.

05

The project will overtake everything.

Cloud migration is a huge project, but if managed properly, your core business will not have to suffer. A small team should be assigned, whereas the rest of your company can continue to work as per usual for now. Ideally, though, they will be prepared for all changes with a change-management process.

06

The cloud is not compatible with our existing systems.

By now, most cloud applications can be used with third-party integrations. Giants such as Microsoft and SAP are even forming strategic partnerships, because they know about the needs of enterprise customers. They have realized: Everyone benefits from our products being compatible with each other. When that is not possible yet, interfaces can be built.

Your digitalization partner is an expert in cloud software und there to support you.

07

Data will be lost during migration.

The likelihood of losing data during migration is low, and there are mechanisms that document potential losses. All in all, the old system remains in place until the new solution is fully ready to use and has been thoroughly tested.

08

The cloud can be unavailable.

The cloud can, just like your own servers, be unavailable. It is a risk that cannot be ruled out. However, the cloud provider guarantees its availability. They promise you a minimum availability of 99.95 %, for example. The high availability is a good argument for including a cloud-based back-up solution.



Cloud migration: what to expect

There are three phases to a cloud migration: preparation, migration and the post-migration period. There are several best practices for cloud migration. They are a basic guide to help you avoid typical mistakes, speed up the process and act as efficiently as possible. However, a cloud strategy has to be unique to match your company, its processes and its requirements.

Working with a migration partner

Bringing a migration partner on board is not only recommended if there is not enough IT expertise in your company, but also if you want to finish such a project as quickly, efficiently and cost-effectively as possible. A partner brings experience and know-how, and can help you find the right strategy and tactics for your project.



When looking for an outsourcing partner, make sure to pay attention to their experience with companies in similar industries of comparable size. Customer references also help decide whether the partner is a good fit for your company.

Phase 1: Pre-migration

“Well planned is half won” definitely applies to cloud migration. The better your planning, the more efficient and cost-effective the implementation. In phase 1, you make theoretical, preliminary considerations to lay the foundation for a successful migration project.

Clarify motivation and objective

First, you should be certain about your motivation and goals for the project. Make therefore sure to involve all stakeholders: IT experts, accounting, management. Ideally, all employees – aka the ones who will later be working with the solution – should be involved as early as possible to increase acceptance of the project.

It is crucial that everyone involved understands the reason for the migration, for example:

- Lack of transparency and communication difficulties between departments
- Business growth
- Capacity bottlenecks in the data center
- High costs due to (aging) hardware
- Competitive pressure
- Security requirements

What companies plan to achieve with migrating to the cloud varies. Common objectives include:

- Maximize business value
- Harmonize all systems (eliminate media disruptions)
- Create a more flexible IT infrastructure
- Adapt processes to a changing market
- Reduce costs
- Develop a digital business model

Planning the migration

Before you start your cloud migration journey, you should take stock (also called cloud readiness assessment). That includes looking at your company's structure, business processes, IT landscape and regulatory requirements. Make an inventory of your systems and take note of dependencies as well as gaps in their previous documentation.

Based on your goals and motivation, choose the right cloud applications and services. In the process you should also compare the costs of the current and the future infrastructure. You will not be able to estimate the precise costs before the actual use of your new infrastructure. However, the clearer and more precise your requirements are, the better costs can be calculated. Ask your migration partner for advice.

Make sure to keep your expectations real and your available resources in mind when planning your migration. It is best to divide the project into separate migration phases, i.e. groups of similar workloads.



Ideally, start with applications that have as few dependencies on other systems as possible, are not business-critical and require little to no customization. At first, prioritizing these applications may seem counterproductive. However, it is an approach that will gain you knowledge. This “learning by doing” will come in handy later when it comes to migrating the crucial parts.

Phase 2: Migration

In the second phase, the actual migration takes place. Together with your digitalization partner you'll start transferring your data and your applications to the cloud.

Test migration

With the help of a migration tool, your data will be transferred to a development or a test environment, and possibly to a copy of the productive environment. Users should then check if all data has been transferred, workflows are running and user requirements are met.

In case problems arise, the migration partner will suggest alternative solutions. This may be the case when there are processes in the new system that did not exist in the old one, or if the new system simply cannot copy old processes anymore.

Implementation

After the test migration and the subsequent test phase follows the actual migration to the productive system. Once it is complete, your migration partner presents the new solution to you. The team documents any changes necessary together with the partner, and you agree on how to proceed.

Often, details have to be reworked, for example:

- Change forms
- Upgrade ISV solutions
- Replace or update code

Once the changes have been implemented, a post-migration follows. Your team then checks if all data was migrated and if changes were transferred from the test environment to the productive environment.

During the migration phase, the partner organizes training sessions to introduce users to the new system and processes. Often, these trainings are for leaders who can then train their team.

Phase 3: Post-migration

Once you have moved to the cloud, you should continuously adapt it. That is how you guarantee that your environment runs as efficiently as possible.

Go-Live

Go-Live means that employees now start working with the new system. The old system is set to read only, meaning that it can still be accessed, but not worked in.

Maintenance & support

Even after the final data migration, there will always be a need for maintenance and support. Together with your migration partner, you can customize your solution to meet the specific requirements of your organization.

Your migration partner is also available to answer questions about usage, to explain individual functionalities of the solution and to fix any problems that may arise.





Conclusion

Thorough planning and a partner with deep experience and know-how are critical if you want your migration to the cloud to be successful. Follow best practices to avoid common mistakes, but make sure to plan and execute the project according to your individual goals and requirements. A migration partner with experience in your industry can provide all the advice and support you need.



We offer a helping hand in your digital transformation

The ideal digital transformation partner is not only an expert in theory and technology but also in its customer's industry. Our consultants are familiar with the processes, priorities and challenges of different sectors. Contact us!

www.proMX.net

 **look@proMX.net**

 **+49 (9 11) 81 52 3-0**

 **+1 (786) 600 2840**

