



# Cloud Solutions & Data Center

Asseco Cloud



We advise clients on their digital transformation process and provide solutions that meet their specific business needs.

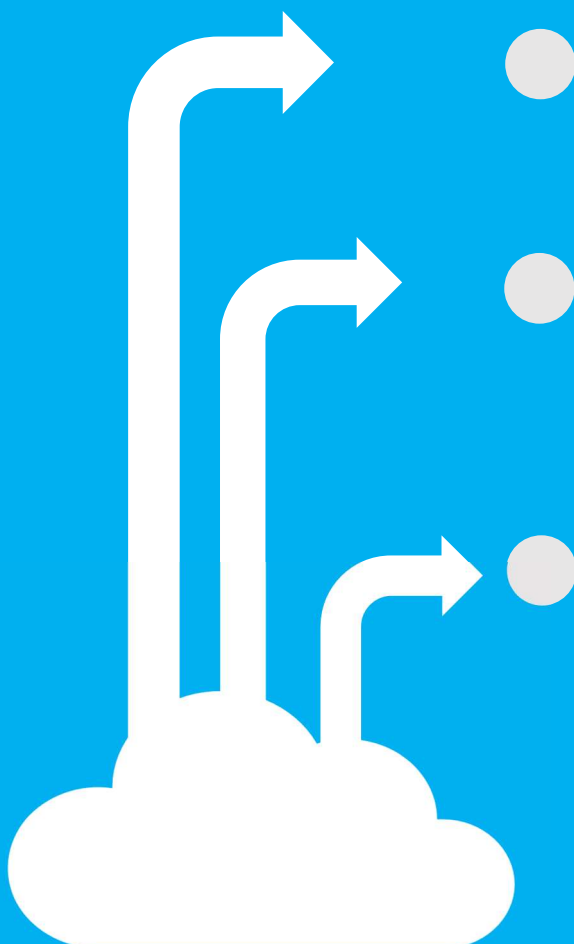
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## Introduction

Above all, we focus on effective operations that combine technological background, experience, and an innovative approach to the opportunities presented by the cloud ecosystem. We provide solutions based on technologies from leading cloud providers such as Azure, Google Cloud, AWS, and Oracle Cloud. We also share the experience and technology facilities available in our Data Center.

The effective transformation of customers' services and technologies is carried out with the help of certified Asseco Cloud experts, so we develop a precise cloud adoption strategy to make the new IT environment perfectly fit the needs. We provide a spectrum of cloud models, through which configuration and services ensure better functioning of the organization. Moving to the cloud can result in significant savings if done properly. Consulting and training support strengthens the organization's position against the competition and improves employee performance.



### Asseco Cloud

- ✓ Private and Public Cloud
- ✓ Dedicated and Hybrid Solutions

### Cloud Solutions

- ✓ Cloud PaaS Solutions
- ✓ Integration of Office 365
- ✓ Modern Workplace
- ✓ Cloud Adoption Plan

### Security & Systems

- ✓ Architecture
- ✓ Analytics
- ✓ System monitoring
- ✓ Manage & IT Audit
- ✓ Infrastructure optimization

## Bridge for cloud technology



**500+**  
**Customers**



**90+**  
**IT experts**



**6 billion**  
**Of Data in Network**  
**Infrastructure in 2020**



of clients highly appreciate the cooperation with Asseco Cloud for adapting cloud solutions to specific needs, requirements and possibilities.

(Customer satisfaction survey Asseco Cloud 2021)

## IT Competences



**IT Architects**



**Data base experts**  
**Oracle, MSSQL,...**



**Administrators**  
**cloud, systems,**  
**applications, networks**

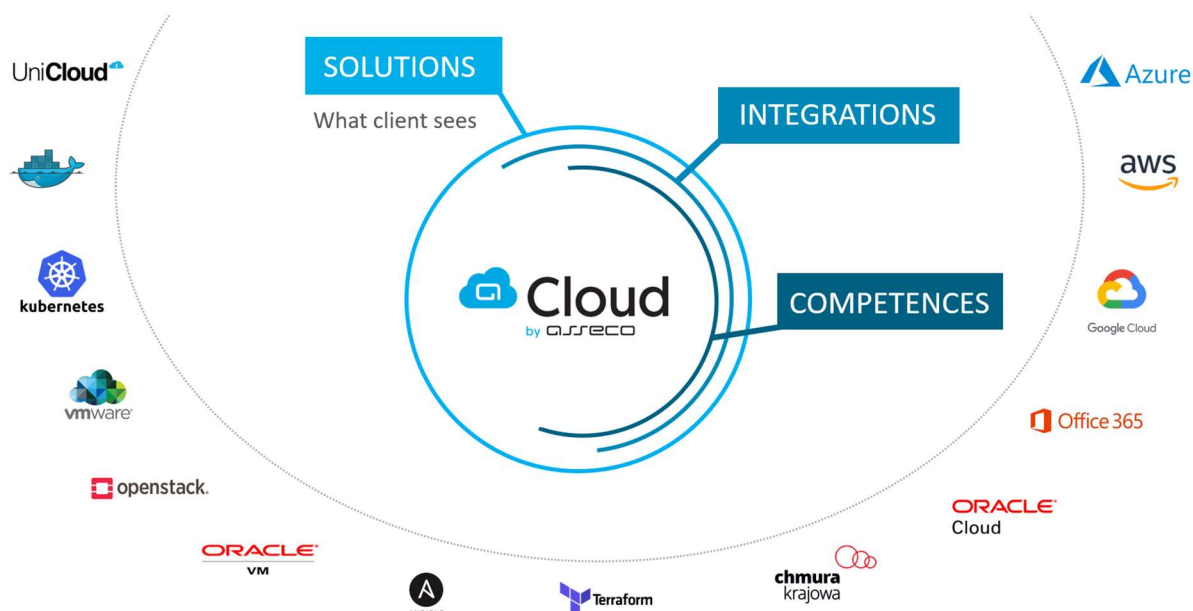


**Project Managment**

*87% of business leaders believe that digitizing company processes is a priority, but only 40% of organizations are able to execute transformation at the scale appropriate for their company.*

*- Gartner Digitalization Insights*

## Cloud from three different perspectives



## Partnerships with key suppliers

### Cloud center of excellence

We are constantly developing and acquiring new competencies in cloud solutions and technologies. We gain knowledge and experience to provide Asseco customers with the highest quality services.

### Asseco solutions and services of in the offer of cloud service providers.

Asseco's solutions and services are made available and promoted in the catalogs of services offered by the largest public cloud service providers.

### Strategic cooperation with partners

As a trusted partner with high class cloud service competences supported by certificates and titles recognized around the world, e.g. Microsoft MVP, we cooperate with cloud providers implementing joint projects for key customers on the Polish market.

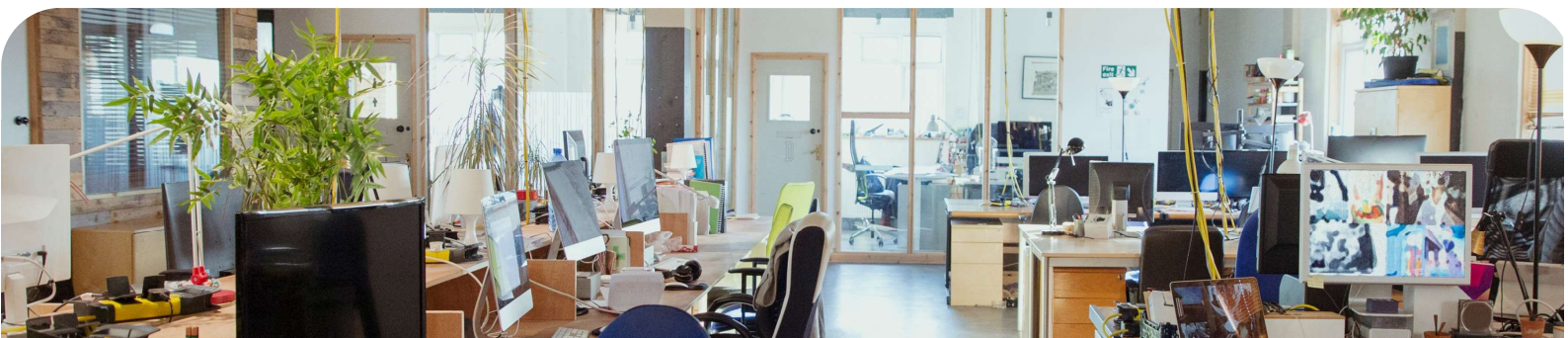


## Cloud and Data Center Services

- ✓ **Outsourcing of data center infrastructure**  
Physical servers, virtual servers, containers, disk space, e.g., lease of 2.3 PB of disk space for online backup provider Xopero or 70 physical servers made available as a service for a single customer.
- ✓ **Environments and services for SaaS applications**  
Combining CPD infrastructure and maintenance services with Biz Divisions licenses to deliver SaaS applications to Customers. e.g. cooperation with POZ as part of the AMMS application delivered for American Heart of Poland.
- ✓ **Multi-cloud & hybrid cloud solutions**  
(Azure, GCP, AWS, Oracle, IBM) Services in the multi-cloud model based on public cloud providers and own data centers. e.g. educational cloud solution based on Google Cloud and CPD ADS, within which we provide the aHCM application for 15 universities.
- ✓ **Specialized services and cloud services**  
Designing, implementing and maintaining IT environments based on our own or customers' infrastructure, e.g. optimization and maintenance of an ERP system for Dino Polska in the Beyond data center.

## Digital transformation

- Professional advice on how to properly define goals
- Preparation and execution of a change management process for the organization
- Support or implementation of new technological solutions
- Assistance in the adoption of new technologies across the organization
- Evaluation of the effects of the changes introduced in relation to the goals set





## Knowledge and experience available in each cooperation phase

### Cloud strategy

Preparations carried out in cooperation with customer allows us to prepare such a strategy that unlocks greatest potential resulting from moving to a cloud, focuses on security processes and systems as well as projects the response to changes in the organization.

### Solution planning

Adapting the solutions to the organization needs and implementation of such a configuration that allows for smooth transition to the new level of cloud solutions. All that can be achieved thanks to thoroughly prepared strategy and cooperation of the group of experts.

### Infrastructure management

End-to-end support of certified experts assigned to the project together with the usage of the latest technology releases the maximum potential of the solution. We provide support for platform modernization and for innovation.

## Implementing and cooperation process

We provide consulting services witch help you to start or expand possibility of your Clouds platform. We provide specialist knowledge, and know-how.

contact with  
an expert

needs analysis

presenting the  
solution

acceptance  
of the proposal

implementation  
or migration

support

## Project based work



In order to create best adjusted approach to launch a project in cloud we learn your organization requirements and needs. The whole process is guided by our knowledge and experience, we also support the already working projects in cloud.

## Dedicated servers effective data management

Each hardware configuration possesses redundant power supplies and network interfaces. Servers are equipped with Intel Xeon processor series E5 or E3. There is also possibility of employing Intel i3-4330 processors. Each server is equipped with management interface (iKVM) secured with encrypted access channel (redundant firewall equipment), included in the server price.

Additionally, servers, instead of local hard-drives (SAS/SATA/SSD), can be attached to disk array by 10GbE or FC connectors. Databases can be secured by replication or system of backups.

**Storage:** Local hard-drives, disk array

- **Backup:** R1Soft, Veeam, backup FTP.
- **Firewall:** ForitGate, based on pfSense, dedicated hardware firewall, context for Cisco ASA.

**IP:** Price of each server includes one external IPv4 address.

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## Virtual servers

efficiency, reliability, scalability

Virtual servers enable flexible scale-up and configuration. Resources can be quickly distributed between servers what increases its efficiency, reliability and operation mobility. We use Intel Xeon processors dedicated especially to virtualization.

By using DAS and SAN solutions one can gain more efficient and cost-effective solutions.

**Technologies:** VMware, Hyper-V.

### Features:

- High availability (HA) – a safeguard against a problem with a single cluster;
  - Easy installation of many separate virtual machines;
  - Installation of subsequent virtual machines on the same server does not increase cost;
  - Easy allocation of resources to individual VM;
  - Possibility to move working virtual machine between physical servers;
  - SLA 99.9%.
- 

## Infrastructure lease

tailored solutions

We create solutions tailored to individual needs of our customers. We optimize efficiency and cost of infrastructure to gain effective and economic impact. Team of specialists, comprising of engineers



and IT architects, take part in the process of developing solutions. Their aim is to understand Customers' needs and support them in the process of specifying their needs in respect of services. By adopting such approach we can guarantee our customers full satisfaction with regard to efficiency, predicted development of infrastructure, and costs.

In order to provide our Customers with the highest level of services, we constantly monitor available technologies and develop our competency.

**The lease offer includes the following:**

- Back-up center;
- Support in configuration of VPN connectors between indicated localizations and Data Center;
- Firewall, IPS/IDS, AV;
- Backup;
- Dedicated links;
- Administrative and Data Center support of a team of engineers regarding development and modification of the already existing infrastructure.

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## Colocation

a solid basis of your business

We render colocation services on the highest level on through three data centers of Asseco Cloud located in Łódź, Szczecin and Bydgoszcz. Customers are offered fully redundant and safe infrastructure complying with Tier 3 requirements. Within long-lasting cooperation we have gained trust of companies from, i.a. banks, public administration, tele-information and insurance. We deliver solutions of optional configuration - from single U to dedicated server rooms fulfilling data center backup needs.

Customers are given access to unique abilities of our engineers and IT architects, what means they receive services at the highest level, being often a combination of typical colocation with leasing server infrastructure, disc space or application solutions. We also offer support in migration and customers' system support.

Within additional services we offer, among others, remote hands and possibility of leasing network devices or backup services based on the infrastructure of our data center solutions' infrastructure.

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## Private cloud

simplicity and flexibility

Collection of resources dedicated to a particular company or an institution. Administrators of such a solution can offer its customers more adjusted services. Servers leased by a company can be located in any of the Data Centers of Asseco Cloud. Private cloud is usually used by big companies and institutions, in particular those that pay special attention to legal and safety matters.

Storing resources in a cloud gives possibility of data integration with servers or infrastructure that is currently being used in an organization.

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## Public cloud

### reliable solution

Public cloud is a good solution for companies which cannot estimate their long run needs for services and, therefore, no tailor offer can be prepared to fit their business scale. In such a situation, it is better to base on predictable cost of a public cloud and possibility of flexible resources scaling, depending on current needs that, for example, derive from gaining new customers. This solution is much better than investing in resources which will not be fully used by a Customer.

This is a solution in which both, companies and institutions, use technologies kept on servers of an external provider. The basic feature of the public cloud is its accessibility. Its advantage is high scalability of services and space, exclusion of expenses connected with purchase of infrastructure or its maintenance, and its service and simplicity.

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## Features

- Customer is charged only for the allocated resources;
  - Easy installation of many separate virtual machines;
  - Easy allocation of resources to individual VM;
  - Virtual machines are secured against problem with a single server - VMware HA;
  - Low license fees of VMware;
  - No cost of physical servers (included in the cost of vRAM)
- 

## Hybrid cloud

### data confidentiality and component availability

Hybrid cloud is a combination of solutions offered by private cloud with those of the public one, namely the possibility to use private resource of a given company and server infrastructure of an external operator.

One of the advantage, is the possibility to perform fast operations on external servers, keep company important data in own, not externally available, resources. In such a solution it is important to pay attention to smooth integration of both services.

## UniCloud

cloud in PaaS model



A platform suitable not only to business but also to developers and administrators. It shortens the time of software creation and improves efficiency of applications written in: PHP, Java, Python, Ruby, and Node.js. It enables fast start of the VPS server with access to root, and easy management of environments. **The winner in Best in Cloud competition, category: “Best PaaS platform for testers and developers.”**

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## UniBackup

expect the best, be prepared for the worst

Safety of your data. Nobody plans to be a victim of theft or predicts to loose data. It always happens exactly when we are not prepared. UniBackup provides automatic backup of files which, after being encrypted, are put in a strictly protected Data Centers in clouds in SaaS model.

Key functions:

- Encryption of data and connection;
  - Sharing chosen catalogues with other users;
  - Reports and users' activity logs available within one license;
  - Folders synchronization guarantees work on up-to-date version of a file;
  - Changes tracking gives possibility of saving even 99 versions of a file;
  - Fast backup thanks to data compression.
- 

## Disaster Recovery Center

radical safeguard

DRC service is a guarantee for your business, no matter what happens. In case of unplanned interruptions in functioning of the main localization, the activity is taken over by a fully independent center, located in a different place.

The procedures are planned individually, in order to use the switching system adjusted to the amount and kind of resources at our customer disposal.

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## Backup

data will never disappear again

With the usage of Server Backup Manager by R1Soft, backup can be managed by customers who use both the virtual servers and the dedicated ones. Data backup on servers of users who benefit from the in-cloud servers is provided by solutions offered by Veeam company.

#### Features:

- **Bare Metal Recovery** - functionality that enables to restore operational system together with data located on other servers;
- **Incremental backup** - copy of only those files that were created, or modified, since the last full backup.
- **Backup schedule** is managed by employees of Asseco Cloud in consultation with the Customer. It is possible to transfer the management over the service by sharing a backup console. As a result, a Customer can manage backup copies and the whole backup policy by himself
- **FTP Backup** is an optional security of data, consisting in making backup copies on disc space available on an ftp server.

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### Protection of network layer through IDS/IPS and AV Firewall

high security standard

Our offer includes solution based on a physical FortiGate devices. Those devices are fitted with specially designed processors which provide highly efficient security. FortiGate devices provide security against threats, both on the network level and on the application one.

Configuration allows for non-problematic service of encrypted traffic. The solution provides, among others, the following safety functions: firewall, VPN, advanced antivirus (signature and behavioral analysis), antispymware/antimalware, IPS/IDS (intrusion prevention system).

In case of service scaling and increasing demands, we offer help in re-designing solutions to adjust them to the new needs.

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### Monitoring

we keep our finger on the pulse 24/7

Monitoring of proper functionality of Data Centre infrastructure takes place in a continuous mode 24/7/365. On a customer request we enable external monitoring services with the usage of Monitis applications. Support is offered on the infrastructure level.

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### Counselling

we share our experience

We offer counselling services in terms of proper infrastructure selection, adjusted to individual needs. We help in estimating the plan of development in time, having development of your business in mind. Asseco Cloud employees are experts with long-lasting experience. They will be happy to share their knowledge whenever you need it.

## VPN in client to site model

accurate safeguard

We use FortiClient solution to service several hundred of concurrent connections by VPN channels.

The connection parameters are discussed with a customer who receives a ready-made configuration file enabling configuration of an application installed on a local station.

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## VPN in site to site model

plenty of solutions

It is possible to accumulate virtual encryption channel VPN in a site to site model, on the basis of software or hardware solution by FortiGate.

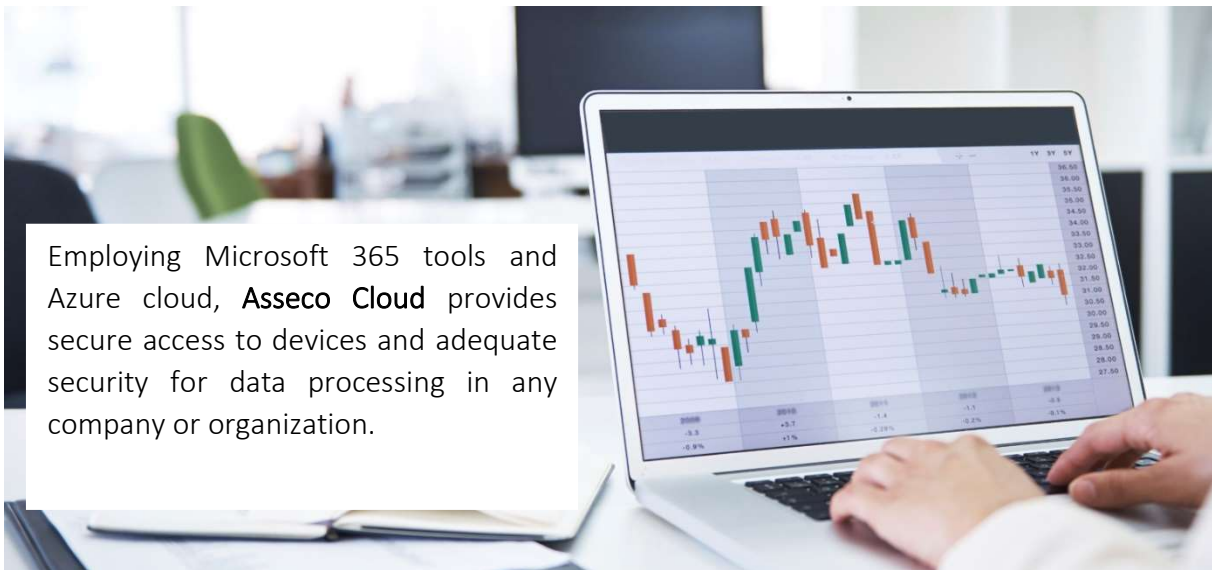
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## Hourly package of administrative support

experts ready to help

Preparation of test environment, works connected with the virtualization environment: machine cloning, changes of network configuration, etc.

## Highest level of technical equipment and users security

A photograph showing a person's hands typing on a laptop keyboard. The laptop screen displays a financial candlestick chart with green and red bars, indicating price movements over time. The background is slightly blurred, showing an office environment with other desks and equipment.

Employing Microsoft 365 tools and Azure cloud, **Asseco Cloud** provides secure access to devices and adequate security for data processing in any company or organization.

## Example of PoC for selected Microsoft tools from the EMS E5 suite

The scope of activities performed by Asseco Cloud in the Proof of Concept – PoC – variant for Microsoft tools. As part of the project, Asseco Cloud will provide support in performing PoC for selected Microsoft tools from the EMS E5 / E3 suite.



- It ensures transfer of knowledge about the suite's products and tools from the Asseco Cloud Team.
- it allows to choose the scope of the partial implementation according to the capabilities and needs of the Customer.
- it delivers a comprehensive training and demonstration series based on Case Studies.
- it provides the Customer's engineering team with support from the experienced Asseco Cloud team in carrying out implementation activities on a small sample.
- information on good and bad practices.
- At the end of the PoC, a report will be produced relating to the evaluation of the results of the activities undertaken.
  - guidelines are provided for the implementation of Organization-wide solutions.
  - recommendations will be collected for further work and in the areas of recommended implementation of selected tools.

Benefits from the implementation of the PoC model with Asseco Cloud.

The main objective is to increase the level of security through the implementation of tools in the Microsoft 365 EMS E5 / E3 suite, introducing advanced protection of identity, devices and applications and a centralized analysis monitoring tool – a SIEM Sentinel solution to the organization.

The premise is to agilely select and then implement comprehensive security solutions based on information gathered in stages and technological lessons learned. After each stage, summaries will be developed and analyzed to further increase the effectiveness of the selected solutions.



### In this type of activity we distinguish 2 main scopes

1. Support in the implementation and execution of the PoC for selected tools available as part of the integrated security system available in the Microsoft 365 EMS E5 /E3 suite.
2. Support and implementation in the PoC model of an event correlation system based on the Microsoft Sentinel cloud solution.

Within each scope, the Asseco Cloud project team carries out specific tasks in close and continuous cooperation with the Customer's IT department.

### Stages of the actions

The actions in the project will be centered around four activities that will be implemented as part of the project.

1. **Transfer of knowledge and experience** – this stage builds awareness of the complexity of the provided solutions and technological tools that can be used in the organization. As a rule, we provide knowledge directed to the Customer's IT department in a series of workshops. The idea behind the series, is to identify multi-faceted, often overlapping tools, resulting in conducive implementations in both the PoC model and the full implementation model at a later stage (after the PoC implementation).
2. **Preparation** – at this stage, information about the current infrastructure, versions, and configuration of the customer's systems will be collected. A schedule of actions will be developed jointly on the basis of a dialogue conducted with the customer and Microsoft (the variant of trilateral cooperation with Microsoft's participation is possible – it depends on the scope of actions selected for implementation), and the Customer's requirements regarding the target configuration and protection of systems will be collected.
3. **Concept** – based on the collected information, architectural concepts for the implemented services will be discussed together with the Customer. We will provide support in creating scenarios based on best practices and experiences from other customer implementations. The Asseco Cloud team will provide expertise in configuration or start-up procedures.
- a) **Implementation** – at this stage, activities will be carried out to support the Customer's team of administrators in implementing and launching particular Microsoft tools. Configuration works and solution tests based on the developed scenarios will be conducted together with the Customer. At each stage of actions, the Customer's IT team will be provided with ongoing consultations with dedicated engineers involved in the entire project. Consultation implemented through: Teams, phone, e-mail.

## Adoption of cloud services – based on the example of Office 365

Support in the effective and secure use of O365 tools by end users.

The Adoption Plan is to adapt the Organization to effectively and securely use the Office 365 technology provided – especially when working in a hybrid model. It is also the process of guiding the Organization through a change in the social and business dimensions of introducing new technological capabilities into everyday habits. The challenges lie mainly in the teams' habits of using “old, tried & tested” methods of working. Conducting the Adoption is about balancing the business objective, supporting security behaviors on the end-user – employee teams – side and enhancing employee capabilities through greater use of cloud services.

### Conducting digital transformation and education

Implementation of the **Adoption plan** is a comprehensive process that guides the Organization step-by-step through the stages of increasing the efficiency and security that comes from using O365 more fully. Ultimately, such action promotes wide, mass – at the company level – adoption of Office 365 tools functionality and opportunities that arise from their active and conscious use. In the next stages of the work. The goal of the project process is also to define scopes that can be implemented automatically by using Power Automate.



### Key benefits

- Increasing the level of use of Office 365 tools by employees makes them more efficient when completing their daily activities.
- By centralizing work in one place, e.g. around O365 tools: from Teams, SharePoint, OneDrive, through Outlook, Tasks, Office Online, to increasing the use of the capabilities of these tools on mobile devices, there are more opportunities to implement centralized security methods on the administration side of these systems.
- By aggregating many of the professional, project processes around the O365 environment, the company can devote attention to more innovative and growth-enhancing topics rather than focusing on maintaining current processes.
- Performing a range of duties can be done faster, and tedious or repetitive tasks can be automated.
- Activities supported e.g. by Power Automate save time and allow you to tackle more demanding work.
- The presented knowledge is directional, adequate to the job-related needs, competences and knowledge unified at the level of the whole Organization, i.e. knowledge that refers to the general functionalities delivered by Office 365 environment.
- Adoption produces quality results not only through educational content. The key is to understand the social functioning processes of teams or the habits of employees, resulting in the development of an appropriate process to raise awareness of O365's capabilities and encourage changes in their area of application.

## Asseco Cloud & Data Center contact details

### Asseco Cloud S.P. z.o.o.

Office Szczecinie  
ul. Królowej Korony Polskiej 21  
70-486 Szczecin

### Data Center

Asseco Cloud  
ul. Kurpińskiego 9  
85-950 Bydgoszcz, Poland

### Data Center

Asseco Cloud  
ul. Narutowicza 136  
90-146 Łódź, Poland

### Data Center

Data Cloud  
ul. Bajeczna 13  
71-838 Szczecin, Poland

**3 independent**  
data centers

**5 000 modern**  
servers



**870m2**  
of data center

**16 protected**  
servers room

**asseco.cloud**