_Cloud Application Development and Modernization

Transform your business
with next-gen cloud applications

40% of European companies claim that the **cloud is necessary** to support application modernization.

Source: IDC

50% and more global companies are predicted to **adopt serverless** functioned platforms by 2025, compared to only 20% in 2021.

Source: Gartner

23% of a CAGR (Compound Annual Growth Rate) with the **global serverless architecture market** projected to increase from USD 7,585 million in 2020 to USD 21,105 million in 2025.

Source: GlobalNewswire

28% potential **increase in revenue** by transitioning from basic cloud infrastructure to containerization.

Source: AWS's 2022 Report

_Navigating market dynamics

In today's dynamic business landscape, when it comes to keeping up with market trends, achieving flexible scalability, managing costs, and staying innovative, **companies face various challenges**:

Coping with evolving market trends

In an ever-changing world, businesses strive to minimize time-to-market in order to meet customer expectations and stay ahead of the competition.

Overcoming persistent challenges

Without access to innovative and modern technologies, solving existing problems and identifying new ones becomes increasingly difficult.

Cost concerns and unpredictability

Serverless and Cloud Native app development heavily relies on pay-as-you-go cloud services, what can lead to challenges in predicting and controlling costs, requiring careful consideration by the cloud architect leading the project.

Flexible business scalability dilemma

Traditional IT infrastructure is designed with fixed capacities, making it hard to scale quickly and adapt to fluctuating demand or growth, necessitating substantial investments in hardware, software, and personnel.

_Maximizing cloud computing capabilities for modern applications

Cloud Transformation requires continuous adjusting to the most-effective technology standards and choosing more **advanced migration approaches delivering more value** for the company and its customers.

Exploring the capabilities of **Serverless** and **Cloud Native** approaches opens up new possibilities for modern application development. By leveraging the power of cloud computing, these innovative strategies offer benefits such as accelerated time-to-market, improved scalability, and streamlined infrastructure management.

Serverless is a cloud computing model that allows organizations to **build and run applications without the need to manage servers**. Instead, specific public cloud services are triggered by events, and the infrastructure is taken care of by the cloud provider.

Serverless is considered the **closest solution to the true concept of cloud computing**, as it offers:

- scalability,

- high availability,

- the ability to pay only for the resources utilized.

In this model, code is typically **deployed within containers**, which are activated in response to specific events such as HTTP requests, database events, alerts, or scheduled tasks. This approach is known as **Function as a Service (FaaS)**, with different names depending on the cloud provider (e.g., **AWS Lambda, Azure Functions, Google Functions**).

Cloud Native is a modern approach to building and running applications that **fully utilizes the capabilities of cloud computing**. It involves designing applications specifically for the cloud, taking advantage of cloud-native services and architectures.

In this approach, **applications are broken down into smaller components called microservices**, which work together to perform specific functions. These **microservices are packaged as containers**, making them easy to deploy, scale, and manage in the cloud.

The main benefit of adopting a Cloud Native approach is the ability to fully leverage cloud capabilities like scalability, elasticity, and agility. It also provides **a pathway for modernizing existing applications and migrating them to the cloud**.

_Exploring the core components of Cloud Native architecture

Cloud Native architecture encompasses several vital components that drive its effectiveness. These include:

Microservices

This approach involves breaking down a large application into modular components or services, enabling greater flexibility, scalability, and independent development and deployment.

Containerization

Containers provide a means to package and isolate applications, ensuring consistency across different environments, simplifying deployment, and enabling efficient resource utilization.

Cloud Infrastructure

Cloud Native applications rely on internet-based servers, databases, and software provided by cloud service vendors, enabling scalable and elastic computing resources.
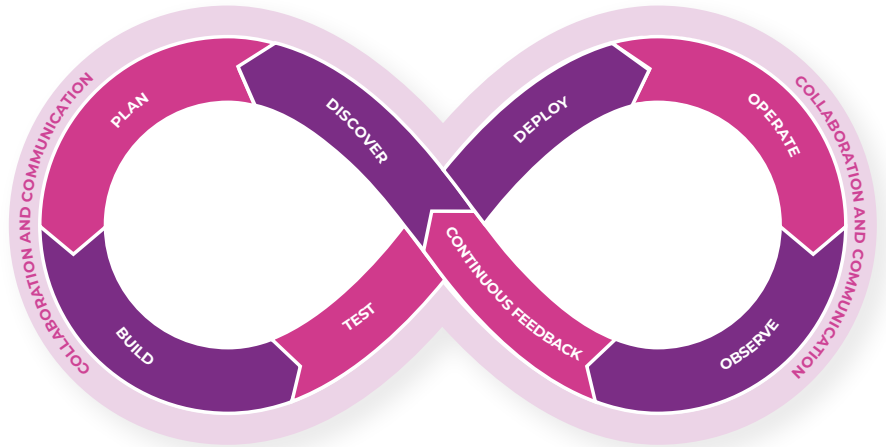
DevOps

DevOps is a collaborative methodology that bridges the gap between development and operations teams, promoting streamlined communication, continuous integration and delivery, automatization, and faster application deployment.

_Before you start app migration and modernization project remember about DevOps

DevOps plays a **crucial role in cloud development and application modernization** by fostering collaboration and streamlining the development and deployment processes.

With the complexities involved in migrating and modernizing applications in the cloud, DevOps practices help **break down silos between development and operations teams**, enabling seamless communication, continuous integration, and delivery.
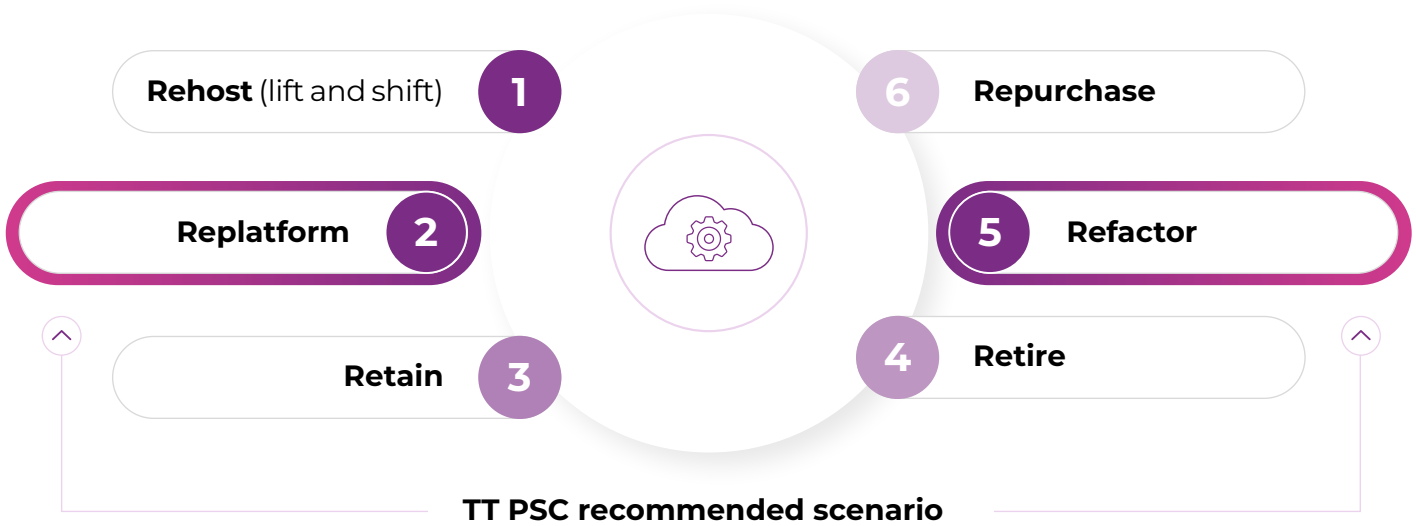
This collaborative approach ensures faster and more **efficient cloud migration**, promotes scalability and resilience, and allows for **continuous improvements** and rapid iterations in the cloud environment.

Ultimately, DevOps practices are **vital in maximizing the benefits of cloud migration and application modernization**, leading to increased agility, improved quality, and enhanced customer satisfaction.

_The best model to modernize apps to Cloud Native and Serverless

We can cover all migration strategies, but from the popular „6 R's" model, we recommend using Replatform or Refactor (or both) in order to maximize the business value for your company with the Cloud Native or Serverless approaches.

Rehost (lift and shift) 1

Replatform 2

Retain 3

6 **Repurchase**

5 **Refactor**

4 **Retire**

TT PSC recommended scenario

_Projects delivery style

In our **distinctive approach** to cloud migration and application modernization projects, our focus lies in evaluating and creating **tailored migration plans for each application**, emphasizing the importance of the **discovery phase**, and ensuring a core team led by a leading architect for knowledge transfer and quality assurance.

1

Assess current state

- Select applications based on functionality & priorities
- Identify apps that address specific business needs
- Assess apps for cloud sustainability

2

Transform legacy code & data

- Convert business logic to a modern language
- Integrate code and data
- Validate system functionality
- Acclimate developers to new language and processes
- Migrate code to IaaS

3

Determine cloud modernization strategy

- Refine: Identify apps that should be modernized
- Replace: Move apps to cloud & retire existing applications
- Enhance: Identify apps that can be made Cloud Native

4

Build Cloud Native apps

- Implement scalable Cloud Native architecture
- Build Cloud Native services
- Migrate to Cloud Native data repositories
- Integrate with interfacing applications

_Value-added proposition

Cloud Native takes full advantage of public cloud portfolio. **Containers** and **microservice** makes them easier to maintain thanks to **DevOps best practices** and they are fully scalable.

When working with us, you can expect:

- Cost reduction and improved cost management
- Applications delivered in a microservices architecture, making development, updates, and maintenance easier
- Improved scalability, both vertically and horizontally if needed
- By implementing the best DevOps practices, automation, and CI/CD pipelines, you can achieve the shortest time to market
- Enhanced security of infrastructure and applications while providing improved observability capabilities with alerts and notifications
- As a single-source vendor, we manage the entire migration process and provide post-deployment management and support
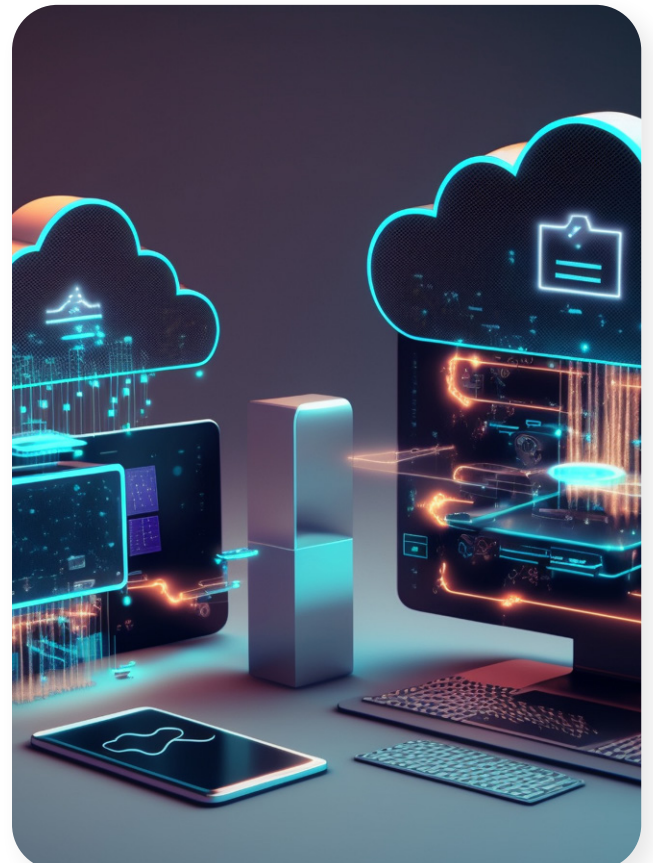
_What are the benefits?

By leveraging the power of cloud technology and embracing Cloud Native & Serverless approach, we bring forth a host of advantages that transform the way you operate by:

Enhanced reliability

Applications built with the Cloud Native model inherently prioritize high availability. They are designed to keep functioning even in the face of potential disruptions.

Flexible scalability

Gone are the days of guessing the required computing power or database capacity for your system. Serverless technology dynamically adjusts resources based on demand.

Swift deployment

With Serverless architecture, hardware and configuration concerns become a thing of the past. Real-time server provisioning eliminates waiting times, allowing for quick and seamless deployment.

Optimized costs

By leveraging Cloud Native applications and adopting the Serverless model, you only pay for actual resource usage. Computing capacity is allocated in response to specific events.

Enhanced security

Cloud application development provides robust security features to safeguard sensitive business data. Cloud service providers employ advanced encryption technologies and strict access controls.

Server management offload

When embracing the Serverless approach, the responsibility of server management falls on the cloud provider. This eliminates the need for your team to handle server maintenance tasks.

_Typical project milestones

01 Modernization Planning

02 Impact Analysis

03 Application Re-Factoring

04 Application Development & Validation

05 DevOps Planning & Implementation

06 Go Live

07 Continuous Monitoring