CLOUD MIGRATION WITH 35X: SOLID PLANNING FOR YOUR SUCCESS IN THE CLOUD

‘Roadmap for Successful Transformation’ – A Guide for Technical Decision-Makers

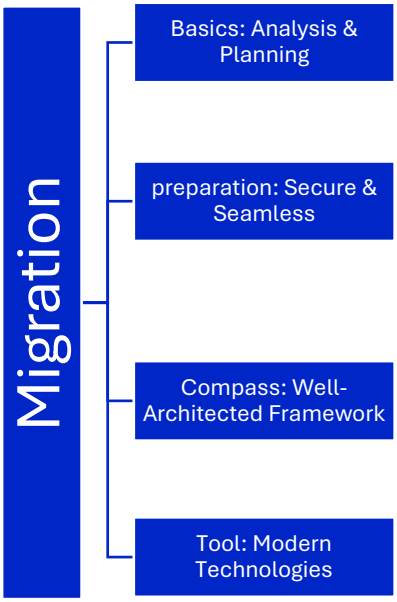
In today’s dynamic business world, the cloud is more than just a trend – it is the foundation for agility, innovation, and competitiveness.
Companies of all sizes are recognizing the immense potential of the cloud to modernize their IT infrastructure, optimize costs, and unlock new business models. However, the journey to the cloud is not a sprint – it’s a marathon.
A successful cloud migration requires strategic planning, the use of modern technologies, and careful preparation.

This paper is aimed at technical decision-makers – IT managers, architects, operations leaders, and anyone responsible for shaping and driving cloud transformation within their organization.

We, 35x GmbH, are your experienced partner on this journey.

With this guide, we aim to provide you with in-depth knowledge and practical insights to ensure your cloud migration is secure, seamless, and successful.

In this paper you will find:



- **Fundamental Principles for Cloud Success**: In the first chapter, we lay the foundation – showing you why analysis and planning are the cornerstones of any successful cloud migration and how to approach this phase effectively. Learn how to understand your IT landscape from a cloud perspective, choose the right strategy, and develop a detailed roadmap.

- **Preparation is key to a secure and seamless migration:** Chapter two focuses on the critical preparation phase. Discover the steps you need to take to protect your data and systems and ensure a smooth transition to the cloud. We cover data backup, security measures, and the vital role of training and support.

- **The Amazon Well-Architected Framework as a Compass**: In chapter three, we introduce the Well-Architected Framework – a proven guide for building excellent cloud architectures. Get to know the six pillars of the framework and learn how to apply them across platforms to design your cloud environment effectively – from operational excellence to cost optimization.

- **Modern Tools for Cloud Migration:** Chapter four dives into the technologies that make a real difference. Discover how Git, GitOps, CI/CD, Infrastructure as Code (IaC), and Software Configuration Management (ScM) can accelerate your migration, ensure quality, and minimize risks. We show you how to make the most of automation and collaboration.

Our goal with this paper is to provide you with a practical insight into our approaches and principles for a successful cloud migration. Compare our perspective and expertise with your own ideas, goals, and strategies to gain new impulses for your cloud transformation. We invite you to explore the key aspects of a well-thought-out cloud migration together with us and to gain fresh insights for your individual journey to the cloud. Of course, we are also happy to offer a personal exchange of experiences or to support you on your path to digital transformation.

Solid Planning for Success in the Cloud – Your Guide to Transformation

Cloud migration is a strategic move with far-reaching implications. It's about more than just relocating data and applications – it's about transforming your entire IT landscape and setting the course for your digital future.

At 35x, we believe that a successful cloud migration begins with thorough analysis and detailed planning. This preparatory phase is not optional – it is essential to the success of the entire project. It serves as the compass that guides you safely through the complex migration process.

In this chapter, we show you why analysis and planning form the foundation of every successful cloud migration – and how we work with you to build that foundation solidly. Because only with a clear strategy and a detailed roadmap can you reach your cloud goals safely and efficiently.

Building a Strong Foundation: Analysis and Planning for the Cloud

Before taking the first step into the cloud, your current IT environment must be thoroughly documented and your individual goals clearly defined. This systematic analysis and planning phase is the most critical part of the entire migration process. Together with you, we lay the foundation for your success in the cloud.

Step 1: A Detailed Look at Your Workloads – Inventory, Analysis, and Identifying Potential

The first step is a comprehensive analysis of your existing IT landscape. This includes taking inventory, evaluating workloads, and identifying suitable candidates for migration. This approach is crucial for selecting the right migration strategy and finding the optimal path to the cloud.

Comprehensive Inventory: Auditing IT Resources

A detailed inventory provides us with a complete picture of your IT landscape and forms the foundation for further analysis. Our inventory process includes:

- Applications: Functionality, architecture, technologies, critical data, number of users, etc.
- Databases: Type, size, performance requirements, database schemas, etc.
- Servers: Quantity, type, utilization, operating systems, configurations, etc.
- Network: Topology, bandwidth, security zones, connections to external systems, etc.
- Storage: Type, capacity, performance requirements, backup strategies, etc.
- Infrastructure Components: Load balancers, firewalls, security appliances, etc.

Detailed Workload Assessment

We analyze every detail of your applications and services. This comprehensive evaluation helps us categorize your workloads and identify the best candidates for migration. Our analysis focuses on the following key areas:

- **Business Criticality:** How essential is the application to your business processes? What would be the impact of downtime?
- **Technical Complexity:** How complex is the application's architecture? What technologies are used? Are there any legacy systems involved?
- **Performance and Scalability Requirements:** What level of performance must the application deliver in the cloud? How much does the load fluctuate? What are the scalability needs?
- **Security and Compliance Requirements:** What security standards must be met? Which compliance regulations are relevant? (Note: Security and compliance will be covered in more detail in later chapters.)
- **Resource Usage and Efficiency:** How efficiently does the application use current resources? Are there opportunities for optimization?

Identifying Migration Candidates

We assess the cloud potential of your applications. Based on the previous evaluation, we select the workloads that stand to benefit most from cloud migration. In doing so, we consider:

- **Potential for Modernization and Innovation:** Which applications could be modernized and enhanced through cloud migration? What new opportunities arise from leveraging cloud services?
- **Expected Benefits and Business Value:** Where do we see the greatest potential for increased efficiency, cost reduction, improved scalability, or greater agility? What business value can cloud migration generate?
- **Possible Challenges and Risks:** Where do we anticipate potential difficulties and risks during migration? How can we proactively address and minimize them? (Note: Risk management will be covered in more detail in later chapters.)
- **Prioritization of Migration Candidates:** Which applications should be migrated first? What is the most logical sequence? We create a prioritized list based on business value, technical feasibility, and risk assessment.

Together with you, we define the ideal migration candidates and lay the foundation for your tailored cloud strategy.

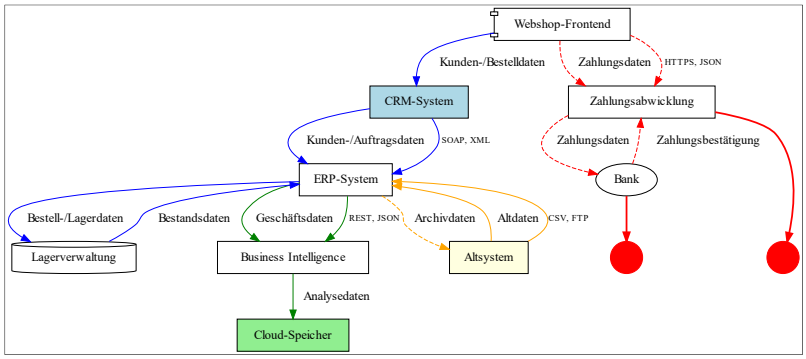
Step 2: Understanding Data Flows and Relationships – Decoding the Inner Workings of Your IT Landscape

In the second step of the analysis, the focus shifts from what IT resources you have to how these resources interact and what data flows exist. We dive deep into the inner workings of your IT landscape to gain a clear understanding of relationships and dependencies. This detailed analysis is essential for managing the complexity of migration and ensuring a smooth transition.

Creating Data Flow Diagrams: Visualizing Data Paths

We create detailed data flow diagrams to visualize how data moves and is processed within your applications and systems. These diagrams illustrate:

- **Data sources and data sinks:** Where does the data come from? Where does it flow to? Which systems generate and process data?
- **Data paths and transformation processes:** What routes do the data take? What processing steps are involved? Where do data transformations occur?



- **Data formats and protocols**: In what formats is the data transmitted (e.g., JSON, binary)? Which protocols are used (encrypted vs. unencrypted, e.g., HTTP/HTTPS)?
- **Critical data paths:** Which data flows are especially important for your business processes (e.g., time-sensitive or production-critical data)? Which data is particularly sensitive (e.g., Intellectual Property (IP), Personally Identifiable Information (PII), etc.)?

This visual representation of data flows helps us identify bottlenecks, redundancies, and potential vulnerabilities in your data architecture, enabling optimal planning for data migration.

Network Traffic Analysis: Uncovering Communication Patterns

We analyze the network traffic in your IT environment to understand the communication patterns between systems and applications. This analysis includes:

- **Identification of communication relationships**: Which systems communicate with each other? How frequently and how intensively do they communicate?
- **Analysis of network protocols and ports**: Which protocols (TCP, UDP, etc.) and ports are used for communication?
- **Measurement of network throughput and latency**: How much data is being transmitted? How fast is the connection? Where are potential performance bottlenecks?
- **Dependencies on external networks and services**: What dependencies exist on external networks (Internet, partner networks) and external services (cloud services, SaaS applications)?

The analysis of network traffic provides valuable insights for planning cloud network architecture, bandwidth sizing, and security configuration.

Identifying Workload Relationships and Dependencies: Understanding System Interactions

We examine the relationships and dependencies between your workloads to gain a holistic view of your system landscape. In doing so, we analyze:

- **Application dependencies**: Which applications share resources or services?
- **Database dependencies**: Which applications access which databases? Which databases are critical for specific applications?
- **Infrastructure dependencies**: Which applications are tied to specific servers, storage systems, or network components?
- **Service dependencies**: Which applications rely on core services such as Active Directory, DNS, monitoring systems, etc.?

Documenting workload relationships and dependencies is essential for migration planning. It helps us define migration waves, accurately map dependencies, and minimize downtime during the migration process.

Analysis of Interactions with External Entities: Understanding Outbound Interfaces

We also examine the interactions of your IT systems with external entities to understand interfaces, data flows, and security aspects that extend beyond the boundaries of your organization. This includes:

- **Customer and partner integrations**: How do systems interact with customer and partner portals, APIs, EDI systems, etc.?
- **Cloud service integrations**: Which cloud services (SaaS, PaaS, IaaS) are already in use or planned for future integration?
- **Connections to external networks**: What connections exist to the internet, partner networks, or other company sites?
- **Security zones and policies at the interfaces**: What security measures are implemented at external interfaces? Which security policies must be followed?

Understanding external interactions forms the foundation for planning cloud security architecture, integrating with external systems, and ensuring compliance (e.g., data protection during cross-border data transfers).

Comprehensive Documentation of Analysis Results: Preserving Knowledge for All Phases of the Migration

All insights from the analysis phase are documented in detail. This documentation serves as a central knowledge base for all subsequent phases of the cloud migration. It includes:

- **Data flow diagrams, network topologies, dependency matrices**: Visual representations of the analyzed relationships and structures.
- **Detailed descriptions of workloads, data flows, and interfaces**: Explanations and clarifications accompanying all visual materials.
- **Inventory lists of IT resources**: Updated and detailed asset inventories.

- **Analysis reports with actionable recommendations**: Summary reports highlighting key findings and providing recommendations for migration planning.

This comprehensive documentation preserves the knowledge gained during the analysis phase and makes it accessible to all project stakeholders. It forms the foundation for informed decision-making and the successful execution of the cloud migration.

This process step enables a deep understanding of data flows, network relationships, and workload dependencies within your IT environment. These insights are essential for selecting the right migration strategy, planning the cloud architecture, and minimizing risks. With 35x, you decode the inner workings of your IT landscape and lay the foundation for a successful cloud transformation.

Step 3: Choosing the Right Migration Strategy – Your Individual Path to the Cloud

After the detailed analysis of your workloads, the next step is to choose the right migration strategy based on the insights gained. There is no single "correct" path to the cloud—the optimal strategy depends on your individual goals, requirements, and constraints. We will explain the common options and help you identify the best path for your organization:

Lift-and-Shift (Rehosting): The Fast Track to the Cloud

"Lift-and-Shift" is the fastest and often most cost-effective migration strategy. Applications and data are moved directly to the cloud without major changes to architecture or code. This strategy is ideal for:

- **Quick entry into the cloud**: Perfect for organizations looking to gain initial cloud experience and migrate their first workloads quickly.
- **Cost-effective migration**: Minimal effort required for adjustments and modernization.
- **Virtualized workloads**: Especially suitable for applications that are already virtualized.

However:
Lift-and-shift does not yet unlock the full potential of the cloud. While you benefit from cloud infrastructure, your applications are not yet optimized for the cloud environment.

Refactoring (Re-Architecting): Cloud-Native Optimization for Maximum Benefits

Refactoring is the most comprehensive and resource-intensive migration strategy, but it also offers the greatest potential. We fundamentally modernize your applications and redevelop them as cloud-native solutions. Refactoring is ideal for:

- **Maximum efficiency, scalability, and agility**: You fully leverage all the advantages of the cloud. Your applications are optimally tailored to the cloud environment.
- **Business-critical applications**: Especially suitable for applications that require top performance, scalability, and high availability.
- **Long-term cloud strategy**: Ideal for organizations aiming to build a sustainable and future-proof cloud environment.

However:
Refactoring is more complex and time-consuming than other strategies.

Replatforming (Lift-Optimize-and-Shift): The Optimized Middle Path

Replatforming is a compromise between "lift-and-shift" and refactoring. We partially adapt your applications to run more efficiently in the cloud without completely redeveloping them. Replatforming is ideal for:

- **A good balance between effort and benefit**: You gain cloud advantages without the high effort of refactoring.
- **Applications with modernization potential**: Suitable for applications that can benefit from targeted optimizations, such as migrating to cloud databases or managed services.
- **Gradual transition to cloud-native architectures**: Replatforming can be a first step toward becoming cloud-native.

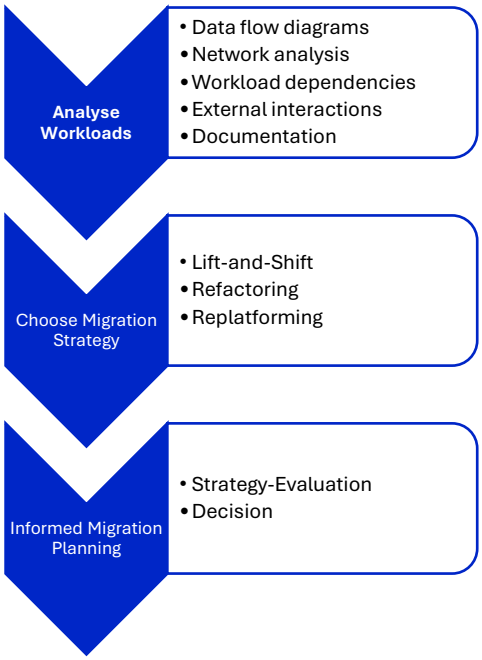
However: Replatforming does not unlock the full potential of cloud-native architectures like refactoring does.

Together with you, we evaluate these migration strategies in detail. We take into account your individual goals, budget, timeline, and the technical characteristics of your applications. This allows us to determine the optimal strategy for your successful journey to the cloud.

Conclusion: Informed Planning – Your Compass for the Cloud

A thorough analysis and detailed planning are essential for a successful cloud migration. They form the foundation of your cloud transformation and lay the groundwork for your long-term success in the cloud. With 35x, you have an experienced partner at your side who will support you comprehensively during this critical phase. We help you understand your IT landscape, choose the right strategy, and develop a detailed roadmap for your cloud journey.

Start your cloud migration with a solid plan – contact us for a free consultation!



Preparation Is Key: Start Your Cloud Journey Safely and Smoothly – Your Foundation for Success

A cloud migration is like the beginning of a journey and as with any journey, the better the preparation, the smoother and more successful the arrival at your destination.
At 35x, we understand that the preparation phase is critical to the success of your cloud transformation. That's why we approach it with the utmost care and verify all results, because mistakes at this stage can lead to unnecessarily high costs and effort later in the process.

In this chapter, we show you why thorough preparation is so important and which steps we take together with you to ensure a secure and seamless transition to the cloud.
Our goal is not just to move you to the cloud, but to ensure that you work securely and successfully once you're there.

Security from the Start: Your Data and Systems in the Best Hands

Security is not an afterthought in a cloud migration - it is an integral part of the planning process. We place the highest priority on protecting your valuable data and systems right from the start. This includes the following steps:

Systematic Risk Assessment: Identifying and Minimizing Potential Threats

Every migration involves risks, and we take them very seriously. That's why we conduct a systematic risk assessment to identify and minimize potential threats at an early stage:

- **Analysis of potential security risks**: Data loss, unauthorized access, system outages, compliance violations, etc.
- **Assessment of likelihood and impact**: How likely is the risk, and how severe would the damage be?
- **Development of risk mitigation strategies**: What measures can we take to reduce or avoid the risks? These may include technical measures (e.g., encryption, redundancy) or organizational measures (e.g., access controls, processes).

Through this proactive risk assessment, we ensure that we are prepared for all eventualities and make the migration as secure as possible.

Analysis of Security and Compliance Requirements: We Meet Your Standards

Every company has individual security and compliance requirements. We carefully analyze your specific guidelines to ensure that your cloud environment meets these requirements:

- **Consideration of industry-specific compliance standards**: GDPR, HIPAA, PCI DSS, etc., we are familiar with the relevant standards and ensure compliance.
- **Analysis of your internal security policies**: We take your existing security policies into account and adapt cloud security measures accordingly.
- **Definition of security objectives for the cloud migration**: Together, we define clear security goals for your cloud environment and determine how to achieve them.

The result: A comprehensive security analysis that forms the basis for implementing robust security measures in your cloud environment, ensuring that your data and systems are optimally protected and all compliance requirements are met.

Processes and Procedures for Data Protection: Your Data is Secure – Before, During, and After the Migration

Your data is your most valuable asset and we treat it as such. That's why we place the highest importance on comprehensive data protection processes and procedures that ensure your data is secure before, during, and after the migration.

Detailes Data Migration and Backup Plan: Step-by-Step to secure Data Transfer

We are developing a detailed data migration plan that precisely defines each step of the data transfer and ensures the highest level of data security. The plan includes:

- **Definition of the migration strategy for each data type**: What data are we migrating and how will we proceed? (e.g., bulk migration, phased migration, etc.)
- **Selection of appropriate migration tools and technologies**: We choose the best tools for your specific requirements and data types.
- **Implementation of data integrity checks**: We ensure that your data is migrated to the cloud completely and without alteration. Data integrity checks (e.g., hash comparisons) are essential in this process.
- **Planning of backup and recovery solutions**: We implement comprehensive backup and recovery solutions in the cloud so that your data remains optimally protected after migration and can be quickly restored in case of an emergency.

Implementation of comprehensive Security Measures: Protection at all Levels

During data migration and ongoing operations, we implement comprehensive security measures to optimally protect your data in the cloud:

- **Constant data encryption**: We encrypt your sensitive data both at rest (e.g., in storage) and in transit (e.g., during migration).
- **Implementation of firewalls and security groups**: We secure your cloud infrastructure with firewalls and security groups to prevent unauthorized access.

- **Access control and identity management**: We enforce strict access controls and identity management to ensure that only authorized users have access to your data.
- **Regular security checks and audits**: We conduct regular security reviews and audits to verify the effectiveness of the security measures and continuously improve them.

Establishment of a Compliance Management System: IT Compliance as an Ongoing Process

Compliance is not a one-time project, but an ongoing process. We help you establish a compliance management system in the cloud that ensures you continue to meet all relevant requirements for data and applications in the long term:

- **Implementation of compliance policies and processes**: We develop clear policies and procedures for handling sensitive data in the cloud and ensure they are actively followed within your organization.
- **Regular IT compliance audits and reports**: We conduct regular audits to verify compliance with IT policies regarding data and applications, and generate compliance reports for your documentation.
- **Continuous adaptation to new compliance requirements**: We stay up to date with new IT compliance requirements and adjust your compliance management system accordingly.

The result: A comprehensive data protection concept that safeguards your data throughout the entire migration process and ongoing operations, ensuring you meet IT compliance requirements at all times.

Training and Support: We take your Team on the Cloud Journey – Knowledge Transfer for Sustainable Success

A successful cloud migration is about more than just technology, it's also about the people who will work with the new environment. That's why we place great importance on comprehensive training and continuous support for your team right from the start:

Technical training for your IT staff: Ready for the cloud

We prepare your IT staff to be cloud-ready. Our technical training includes:

- **Fundamentals of cloud technologies**: Introduction to cloud concepts, architectures, and services.
- **Operating the new cloud platform**: Hands-on training in using the cloud console, APIs, and tools.
- **Infrastructure as Code (IaC) and automation**: Training in Terraform, Puppet, Ansible, and CI/CD pipelines.
- **Cloud security**: Best practices for cloud security, IAM, encryption, and security monitoring.
- **Data management in the cloud**: Backup, recovery, data migration, and managing databases in the cloud.

We follow a holistic approach aimed at involving and empowering the entire IT team from the very beginning. Through this continuous process, we ensure that by the end of the project, your IT department fully masters the new infrastructure and can use and expand it independently without further guidance.

Process training for your business departments: Understanding and embracing new processes

Cloud migration can also impact your business processes. That's why we provide training for your business departments as well:

- **Introduction to new processes and workflows**: How do workflows change as a result of the cloud migration?
- **Using new cloud-based applications**: Training on how to operate new applications and services in the cloud.
- **Best practices for collaboration in the cloud**: How can teams collaborate efficiently in a cloud environment?

Continuous Support and Personalized Consulting: We Won't Leave You Hanging

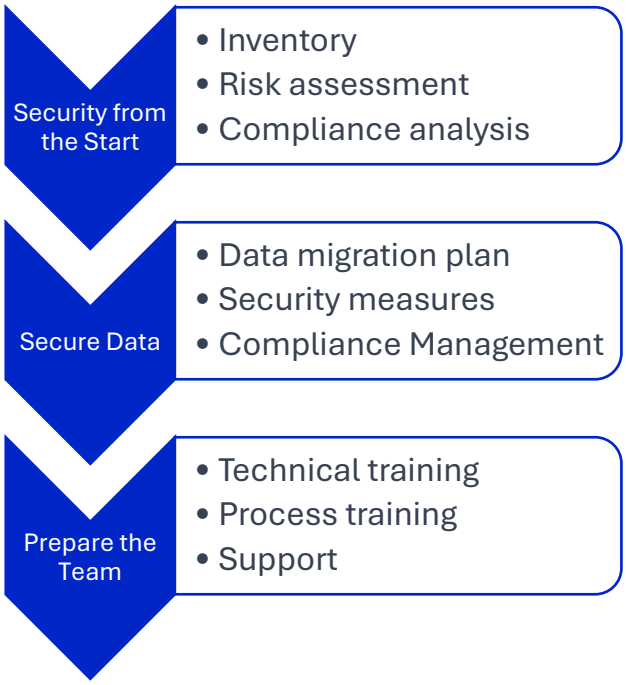
Even after the migration, we are here for you. Our team is always by your side and offers:

- **Technical support for questions and issues**: Quick assistance with technical challenges.
- **Personalized consulting and best practices**: We share our knowledge and experience with you.
- **Regular workshops and knowledge-sharing sessions**: We keep you up to date on new cloud trends and technologies.

The result: A well-trained and prepared team that understands the cloud environment, can use it effectively, and actively contributes to the cloud transformation. This ensures **sustainable success through knowledge transfer**.

Conclusion: Optimally prepared for the Cloud With 35x – for a secure and successful Start

A **careful preparation is the foundation** for a successful cloud migration. At 35x, we take the time to thoroughly analyze your IT environment, minimize risks, implement comprehensive security measures, and optimally prepare your team.
This ensures that your cloud migration is secure, smooth, and successful, allowing you to fully leverage the benefits of the cloud.



Amazon Well-Architected Framework: Your Compass for Excellent Cloud Architectures

Imagine the Amazon Well-Architected Framework as your personal compass for the cloud. It is a proven and comprehensive guide that helps you design not just functional, but outstanding cloud architectures. At 35x, this framework is our benchmark for quality and we apply it across all providers, whether AWS, Azure, Google Cloud, OpenStack, or hybrid scenarios.

The framework consists of six pillars that represent the fundamental principles we consider in every cloud project. This ensures that your cloud solution delivers optimal performance, is secure, runs reliably, and remains cost-efficient.

The 6 Pillars of the Well-Architected Framework: Our Quality Standard in Detail

Each pillar of the framework addresses a critical success factor for your cloud environment. Below is an overview of the individual pillars and an analysis of how their principles impact your success in the cloud.

Operational Excellence: Efficient Operations and Automation

Operational excellence means your cloud environment runs smoothly and efficiently, allowing your team to focus on what really matters: innovation and development. It's about more than just daily operations, it's about continuously improving your processes and workflows. Specifically, this means for us:

- **Infrastructure as Code (IaC) is a must**: We define your infrastructure as code so that deployments are reproducible, consistent, and automated. This minimizes errors and saves time. Tools like Terraform are essential here.
- **Automation, automation, automation**: Recurring tasks such as deployments, testing, and monitoring are automated. This makes operations more efficient and your team more productive. CI/CD pipelines, which we will cover in a later chapter, are key here.
- **Comprehensive monitoring and logging**: We implement seamless monitoring of your systems using cloud-native monitoring solutions. This allows us to detect issues early and identify performance bottlenecks, enabling immediate response and resolution.
- **Clearly defined incident processes**: When something goes wrong, speed is crucial. We define clear processes for incident management to minimize disruptions. Automated alerts and prepared runbooks support this approach.

- **Continuous improvement as a culture**: We establish a culture of continuous improvement. Regular analysis, feedback loops, and metrics help us to constantly optimize your cloud environment.

The result: a cloud environment that runs stably, requires little maintenance, and frees up your team to focus on more important tasks.

Security: Comprehensive Protection of Your Data and Systems

Security in the cloud is non-negotiable. It's not an add-on, but must be integrated into the architecture from the very beginning. The "Security" pillar of the Well-Architected Framework means for us:

- **Strong identity and access management (IAM)**: We implement a robust IAM system that precisely controls access to your cloud resources. "Least privilege" and multi-factor authentication are our standard. We use the IAM services of the respective cloud providers.
- **Data protection and encryption at all levels**: Your data is valuable. We protect it comprehensively, both at rest and in transit. Encryption is a central element. We use key management services to securely manage encryption keys.
- **Robust infrastructure security**: Firewalls, security groups, intrusion detection, we rely on multi-layered security to optimally protect your cloud infrastructure. In addition, network segmentation minimizes the attack surface.
- **Application security from the start**: Security begins in the code. We integrate security by design into the development process. Regular security scans and penetration tests help us detect and fix vulnerabilities early.
- **Compliance and governance – meeting regulations, minimizing risks**: We ensure that your cloud environment is compliant (e.g., GDPR, industry-specific regulations). Clear governance policies and controls support this approach.

The result: A cloud environment where your data is secure, risks are minimized, and all IT compliance requirements are met.

Reliability: Availability and Fault Tolerance

Your cloud services must be available at all times, outages are not an option. We implement the "Reliability" pillar of the Well-Architected Framework as follows:

- **Fault tolerance and redundancy as a core principle**: We design your architectures to be fault-tolerant from the ground up. Redundancy, availability zones, and auto scaling ensure that your services continue to run even if individual components fail.
- **Comprehensive backup and rapid recovery**: Data loss is a nightmare, so we implement detailed backup and recovery strategies to keep your data safe and quickly restorable in an emergency. We use cloud-native backup and DR services and test the entire system regularly.
- **Disaster recovery (DR) for worst-case scenarios**: We plan for the worst. Detailed disaster recovery plans ensure business continuity even during large-scale outages. DR testing is a fixed part of our processes.

- **Proactive monitoring for reliability**: We monitor critical metrics such as availability, latency, and error rates in real time. Automated alerts ensure we can respond immediately to any issues.

- **Fault tolerance and resilience**: We design your applications and systems to be fault-tolerant and resilient. Techniques such as redundancy and replication help minimize outages and increase stability.

The result: A cloud environment that is highly available, remains stable under load, and can be quickly restored in the event of failure. Your customers can rely on your services.

Performance Optimization: Maximum performance with minimal resource consumption

In the cloud, efficiency is key. It's about making optimal use of available resources while ensuring outstanding performance for your applications. We achieve the goals of the "Performance Optimization" pillar in the Well-Architected Framework through:

- **Intelligent resource selection:** We choose the optimal compute, storage, and network resources for your workloads, taking into account performance requirements and cost considerations. Cloud services with flexible scaling (auto scaling, serverless) are often the best choice.

- **Continuous performance monitoring and analysis:** We monitor your applications' performance in real time. Performance bottlenecks are identified, root causes analyzed, and optimization potential uncovered. Cloud-native performance monitoring tools support us in this.

- **Regular load and performance testing:** We conduct load and performance tests to ensure your applications remain stable and performant even under high load. This prepares you for peak demand.

- **Caching and CDNs for fast load times:** We use caching strategies and content delivery networks (CDNs) to minimize latency and optimize performance for your end users. This is especially important for web applications.

- **Code and database optimization – fine-tuning for maximum efficiency:** We optimize code and database queries to improve performance and reduce resource consumption. Database performance monitoring and code profiling are our tools of choice here.

The result: A cloud environment that is fast, responsive, and efficient. Your applications perform optimally, and you save resources.

Cost Optimization: Efficient Cost Management in the Cloud

Cloud costs can quickly become complex, so it's especially important to keep them under control and stay within budget. The "Cost Optimization" pillar of the Well-Architected Framework helps you maintain visibility and optimize your spending. For us, this means:

- **Full cost transparency and detailed monitoring:** We ensure maximum transparency of your cloud costs. With cost management tools, you can maintain an overview, analyze expenses, set budgets, and identify trends.

- **Right-sizing resources and continuous optimization:** Continuously optimizing the size and configuration of your cloud resources ensures you don’t pay more than necessary. Cloud advisors support us in efficiently sizing resources.

- **Auto scaling for demand-based resources:** We use auto scaling so that your resources automatically adjust to actual demand. This helps avoid idle costs and ensures you only pay for what you truly need.

- **Leveraging smart discount models:** Cloud providers offer discount options such as Reserved Instances or Savings Plans. We help you make the most of these to reduce costs, especially for long-term resource needs.

- **Cost-conscious design from the start:** We consider cost factors right from the design phase. We choose cost-efficient services and architectures and avoid unnecessary complexity.

The result: A cloud environment where you actively manage your costs, avoid unnecessary expenses, and ensure your cloud investments pay off.

Sustainability: Taking Responsibility, Conserving Resources

In a world where sustainability is becoming increasingly important, the environmental impact of IT infrastructures plays a crucial role. The Amazon Well-Architected Framework reflects this development by adding "Sustainability" as its sixth pillar. This pillar emphasizes designing cloud workloads in a resource-efficient and energy-efficient manner, aiming to minimize the ecological footprint. At 35x, we believe that sustainability and excellent cloud architectures go hand in hand.

The "Sustainability" pillar in the Well-Architected Framework focuses on best practices and principles that help you make your cloud environment more sustainable. It's not just about energy efficiency, but a holistic approach that considers the entire lifecycle of your cloud workloads. The key aspects of this pillar include:

- **Focus on energy efficiency:** The energy consumption of data centers is a major factor in the IT sector's ecological footprint. By using energy-efficient hardware and services, selecting energy-efficient regions, and optimizing resource utilization, the energy efficiency of your IT architecture can be significantly improved.

- **Resource conservation and circular economy:** Sustainability also means conserving resources and promoting a circular economy. This includes extending hardware lifecycles, recycling and reusing hardware, and reducing electronic waste in general.

- **Holistic approach and continuous improvement:** Sustainability is not a one-time project but an ongoing process. Measurable sustainability goals must be defined during the planning phase, considered in the design, and continuously optimized throughout the entire architecture.

- **Transparency and reporting:** Communicate your sustainability efforts transparently and report regularly on your progress. Sustainability reports and environmental metrics help inform your stakeholders and build customer trust.

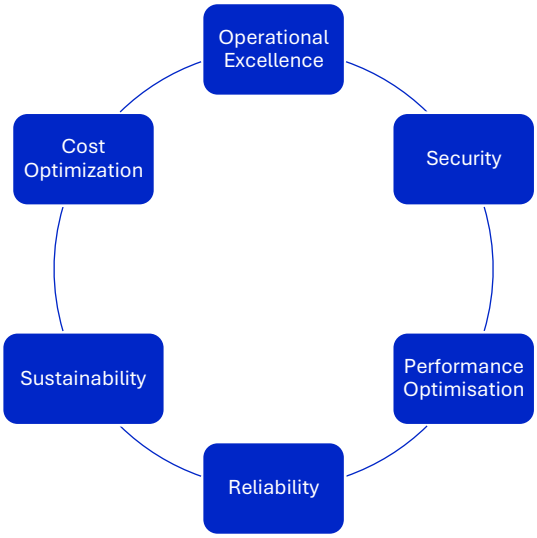
The result: A cloud environment that is not only high-performing, secure, and cost-efficient but also sustainable and environmentally friendly. You take responsibility for the environment, conserve resources, and contribute to a sustainable digital future.

Integration of Sustainability into the 5 Original Pillars: A Holistic Approach

The "Sustainability" Pillar is closely linked to the other five pillars of the Well-Architected Framework. Sustainability is not an isolated aspect, it should be integrated into all areas of cloud architecture. Here are some examples of how sustainability is reflected in the other pillars:

- **Operational Excellence & Sustainability**: Automation and efficient operations not only reduce operational effort but also energy consumption. Optimized processes lead to better resource utilization and thus greater sustainability.
- **Security & Sustainability:** Security measures can indirectly contribute to sustainability by preventing system failures and data loss, which would otherwise waste resources and energy.
- **Reliability & Sustainability**: Highly available and reliable systems minimize downtime and the need for emergency measures, which could lead to additional resource consumption.
- **Performance Efficiency & Sustainability**: Performance optimization aims to use resources efficiently and maximize output. A well-performing application requires fewer resources, making it more energy-efficient and sustainable.
- **Cost Optimization & Sustainability**: Cost optimization and sustainability often go hand in hand. Efficient resource usage and avoiding idle costs not only reduce your cloud expenses but also your energy consumption and environmental footprint.

Conclusion:
Sustainability is an **important sixth pillar** of the Well-Architected Framework that helps you make your cloud environment more environmentally friendly and resource-efficient. By integrating sustainability aspects into your cloud strategy and implementing the framework's best practices, you take responsibility for the environment while also benefiting from more efficient and cost-effective cloud solutions. **At 35x, we support you in building a cloud that is not only excellent but also sustainable.**



Framework Adaptation for Multi-Cloud: Consistency Across All Platforms

Although the Well-Architected Framework was developed by AWS, its principles are universally applicable. At 35x, we apply this framework across platforms, whether you're using AWS, Azure, Google Cloud, OpenStack, or a hybrid cloud. We tailor the implementation to each specific cloud platform. Below are practical examples of how the principles are successfully applied to other providers:

- **Operational Excellence:** We use Azure Monitor and Google Cloud Operations Suite in the same way as AWS CloudWatch to ensure comprehensive monitoring across multiple clouds. We also rely on Infrastructure as Code (IaC) with tools like Terraform, which is multi-cloud capable.
- **Security:** Azure Security Center and Google Cloud Security Command Center help us centralize security policies and manage security in multi-cloud environments. We ensure that security principles such as IAM, encryption, and network segmentation are implemented consistently across all clouds.
- **Reliability:** For backup and disaster recovery in multi-cloud scenarios, we integrate services like Azure Site Recovery and Google Cloud Backup and DR. It's essential that backup and DR strategies are tailored to the specific requirements of each cloud platform.
- **Performance Efficiency:** Azure Advisor and Google Cloud Recommender offer similar performance optimization recommendations as AWS Trusted Advisor. We use these tools to right-size resources across all clouds and identify performance bottlenecks.
- **Cost Optimization:** Azure Cost Management and Google Cloud Billing allow us to analyze and manage costs across different cloud platforms. We help you take advantage of platform-specific discount models and optimize your spending.

Our promise: No matter which cloud platform you choose, with the Well-Architected Framework as your compass and our expertise at your side, you'll build an excellent, future-proof, and successful cloud environment.

Our Tools for Cloud Migration: Cutting-Edge Technologies for Your Success

At 35x, we rely on a suite of cutting-edge technologies to not only carry out your cloud migration but to make it a complete success. Our toolbox is filled with best-of-breed solutions that work seamlessly together to ensure a smooth, efficient, and secure migration process. At the core of our strategy are automation, collaboration, and quality assurance. We achieve this through the use of Git, GitOps, and CI/CD.

Git: The Foundation for Collaboration and Version Control

Git is more than just a version control system, it's the central hub for collaboration in cloud migration projects. Git enables teams to work efficiently on infrastructure code and configurations, track changes, and ensure quality. Here's why Git is so important to us:

- **Version control for infrastructure code:** Just as developers version their application code, we version your infrastructure code with Git. Every change is traceable, and previous states can be restored, providing security and control.
- **Team collaboration:** Git enables parallel work and efficient collaboration. Through branching and merging, multiple team members can work on the infrastructure simultaneously without interfering with each other.
- **Code reviews for highest quality:** Before any infrastructure changes go live, they are reviewed by colleagues. Code reviews are standard with Git. They help catch errors early, establish best practices, and promote knowledge sharing within the team.
- **Audit trail and traceability:** Who changed what and when? With Git, you have a complete audit trail of all changes. This is not only crucial for troubleshooting but also highly relevant for compliance and security requirements.
- **Foundation for automation (GitOps & CI/CD):** Git is the foundation of our automation strategy. GitOps and CI/CD are built directly on Git and leverage its version control and automation capabilities.

The result: Git provides the foundation for a professional and collaborative approach to cloud migration projects. It ensures quality, increases transparency, and serves as the basis for automation.

GitOps: Infrastructure Management from the Git Repository

GitOps goes a step beyond traditional version control. It establishes Git as the *single source of truth* for your entire infrastructure. This means the desired state of your infrastructure is defined declaratively in Git. Automated processes then ensure that the actual infrastructure always matches the state defined in Git. The benefits of GitOps include:

- **Declarative infrastructure definition:** Your infrastructure is described as code in Git using a declarative language like HCL (HashiCorp Configuration Language) for Terraform. This makes the infrastructure readable, understandable, and maintainable.

- **Automated reconciliation – Git as the control center:** Automated tools (e.g., Argo CD, Flux) monitor the Git repository. Changes in the Git repository are automatically detected and applied to the live infrastructure (Continuous Delivery). These tools ensure that the live infrastructure always matches the state defined in Git (reconciliation).

- **Self-service infrastructure for developers:** Developers can initiate infrastructure changes via pull requests in Git. Once approved and merged, the changes are automatically rolled out, accelerating processes and relieving operations teams.

- **Faster recovery in case of failure:** In the event of an error or misconfiguration, the infrastructure can quickly be restored to a known, working state by reverting a commit in Git.

The result: GitOps makes infrastructure management more efficient, secure, and transparent. Git becomes the central control hub for your cloud infrastructure and enables self-service for developers.

CI/CD: Automating Deployments and Quality Assurance

Continuous Integration (CI) and Continuous Deployment (CD) are at the heart of our automation strategy. CI/CD pipelines automate the entire deployment process, from code changes to production delivery. CI/CD ensures:

- **Automated build and test processes (CI):** Every code change (e.g., a commit in Git) automatically triggers a build and test pipeline. Automated tests (unit tests, integration tests, etc.) ensure that the code works and is free of errors.

- **Automated deployments to various environments (CD):** After successful tests, changes are automatically rolled out to different environments, from development to testing to production. Manual deployments become a thing of the past.

- **Faster release cycles and time-to-market:** CI/CD accelerates the entire software and infrastructure delivery process. More frequent and faster releases allow you to respond quickly to market changes and bring innovations to your customers faster.

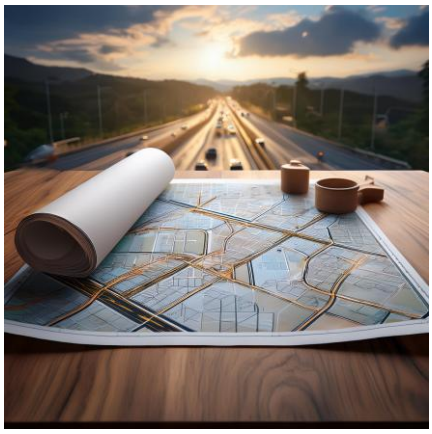
- **Higher software quality and stability:** Automated testing and deployments reduce errors and inconsistencies. Continuous integration and feedback loops lead to higher code and infrastructure quality and more stable systems.

- **Reduction of manual errors and risks:** Automation minimizes manual intervention and the associated sources of error. Deployments become more reproducible and less error-prone, significantly reducing the risk of production outages.

The result: CI/CD accelerates your cloud migration, improves the quality of your infrastructure and applications, and reduces risks. You benefit from faster release cycles and greater agility.

Infrastructure as Code (IaC) and Software Configuration Management (ScM): The Building Blocks of Automation

Infrastructure as Code (IaC) and Software Configuration Management (ScM) are the technical foundations of our automation strategy. They allow us to define, version, and automate infrastructure and software as code. Here's how IaC and ScM work together with CI/CD:



- **Infrastructure as Code (IaC) with Terraform:** With Terraform, we define your entire cloud infrastructure as code (e.g., virtual machines, networks, databases, load balancers). This IaC code is versioned in Git and automatically deployed by CI/CD pipelines. IaC ensures a reproducible, consistent, and version-controlled infrastructure.
- **Software Configuration Management (ScM) with Puppet and Ansible**: With ScM tools like Puppet and Ansible, we automate the configuration of your servers and applications. ScM code is also versioned in Git and automatically deployed to target systems via CI/CD pipelines. ScM ensures standardized, consistent, and low-maintenance configurations.
- **CI/CD orchestrates IaC and ScM deployments**: CI/CD pipelines serve as the orchestration hub for IaC and ScM. They manage the entire process, from code changes in Git, through validation (testing), to the automated deployment of infrastructure and software across various environments. CI/CD unites IaC and ScM into a fully automated deployment workflow.

The result: IaC and ScM, orchestrated through CI/CD, enable full automation of infrastructure and software deployments. Manual configurations and error-prone manual work are a thing of the past. You benefit from efficiency, consistency, and speed.

Integrated QA and Automated Load Testing: Quality Assurance from the Start

Quality assurance is not an afterthought, it's an integral part of our cloud migration approach. We embed QA directly into our CI/CD pipelines and rely on automated testing at various stages. A particular focus is placed on load testing with synthetic traffic to evaluate performance and stability under real-world conditions:

- **Automated tests in the CI pipeline:** Every code change goes through automated testing phases in the CI pipeline, such as unit tests, integration tests, functional tests, security tests, and compliance checks.

- **Load testing with synthetic traffic in the QA environment:** In the quality assurance (QA) environment, we use load testing tools to run automated load tests with synthetic traffic. We simulate realistic user loads to test the performance and stability of migrated applications under stress.

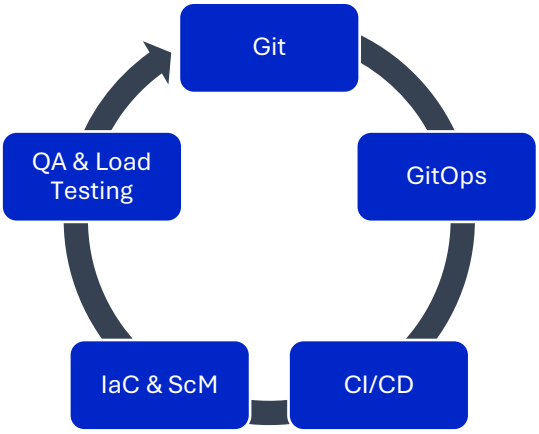
- **Performance monitoring during load tests:** During load testing, we monitor system performance in real time (e.g., response times, CPU and memory usage, error rates). Performance monitoring tools provide valuable data for analysis and optimization.
- **Automated evaluation and reporting:** The results of automated tests and load tests are automatically analyzed and compiled into reports. In case of errors or performance bottlenecks, developers are automatically notified so issues can be resolved quickly.
- **Load testing in pre-production with realistic data:** Before go-live, we conduct load tests in a pre-production environment that closely mirrors the production setup. We use realistic data and load profiles to validate performance under real-world conditions. Application owners are often involved in these tests.

The result: An integrated QA system with automated testing and load testing ensures the quality of your cloud migration from the very beginning. You go live with applications and infrastructure that are tested, high-performing, and stable, minimizing risks in the production environment.

Conclusion: Cutting-Edge Tools for Your Successful Cloud Migration

With our toolbox of Git, GitOps, CI/CD, IaC, ScM, and integrated QA/load testing, we are fully equipped to make your cloud migration a success.

We rely on **automation, collaboration, and quality assurance** for a smooth, efficient, and secure transition to the cloud.



Become Cloud Champion with 35x – Strategic Expertise for Your Sustainable Success

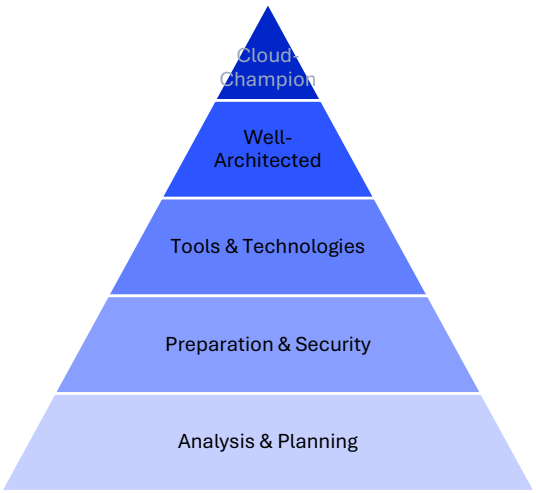
The journey to the cloud is a transformation with enormous potential. As we've shown in this guide, a successful cloud migration is not a matter of chance. It requires solid planning, the use of cutting-edge technologies, careful preparation, and a deep understanding of the principles of excellent cloud architecture.

In this paper, we've provided you with a comprehensive roadmap covering the key aspects of a successful cloud migration:

- We emphasized that analysis and planning form the foundation, the compass that guides you safely through the migration process. A clear strategy and a detailed roadmap are essential to efficiently achieve your cloud goals.
- We introduced the modern tools that make the difference, from Git and GitOps to CI/CD, Infrastructure as Code, and Software Configuration Management. These technologies enable automation, collaboration, and quality assurance at the highest level.
- We highlighted the importance of preparation, especially regarding security and a smooth transition. Careful preparation protects your data, minimizes risks, and ensures your team is well-prepared for the cloud environment.
- We presented the Amazon Well-Architected Framework as a compass for excellent cloud architectures, a proven guide that helps you design your cloud environment to be secure, reliable, performant, cost-efficient, and sustainable across platforms.

But theory is only the first step. The real challenge lies in putting these principles and technologies into practice and developing a customized cloud solution that is perfectly tailored to your individual needs. This is where 35x comes into play.

We are more than just consultants – we are your partner for cloud transformation. With our years of experience, deep technological expertise, and holistic approach, we support you step by step on your journey to the cloud.



Our Range of Services includes:

- **Strategic Consulting**: We help you develop your cloud strategy, choose the right migration approaches, and clearly define your cloud objectives.
- **Architecture Design**: Our experienced cloud architects design customized cloud architectures that are perfectly tailored to your workloads and aligned with the principles of the Well-Architected Framework.
- **DevOps and Automation**: We implement modern DevOps practices and automation solutions (CI/CD, IaC, ScM) to efficiently operate your cloud environment, reduce time-to-market, and ensure quality.
- **Migration Execution**: Our migration experts carry out your cloud migration securely and smoothly – from data migration to application modernization.
- **Training and Support**: We prepare your team for the cloud and continue to support and advise you even after the migration.

With 35x, you become a cloud champion. We help you unlock the full potential of the cloud, drive your digital transformation successfully, and gain sustainable competitive advantages.

Ready to start your cloud journey?

Contact us today for a non-binding consultation. Together, we'll find the optimal path to the cloud for your business. We look forward to accompanying you on your way to becoming a cloud champion!