

altran

CLOUD MIGRATION STRATEGY AND BENEFITS





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According to Gartner:

17.5%

Worldwide public cloud services market is projected to grow in 2019 to total \$214.3 billion, up from \$182.4 billion in 2018.

27.5%

Growth in fastest-growing market segment will be infrastructure as a service (IaaS), which is forecast in 2019 to reach \$38.9 billion, up from \$30.5 billion in 2018.

21.8%

The second-highest growth rate will be achieved by platform as a service (PaaS).

19%

Spent on cloud consulting, implementation, migration and managed services, will increase to 28 percent by 2022.

INTRODUCTION

Today organizations are trying their best to optimize the cost around managing and maintaining their infrastructure and applications. However, they also require quickly scalable infrastructure and services that need high-end computing. To achieve highly-scalable services at a low cost, organizations are realizing the need to adopt public cloud. This is driving significant growth for public cloud providers such as "AWS", MS Azure and Google cloud platform.

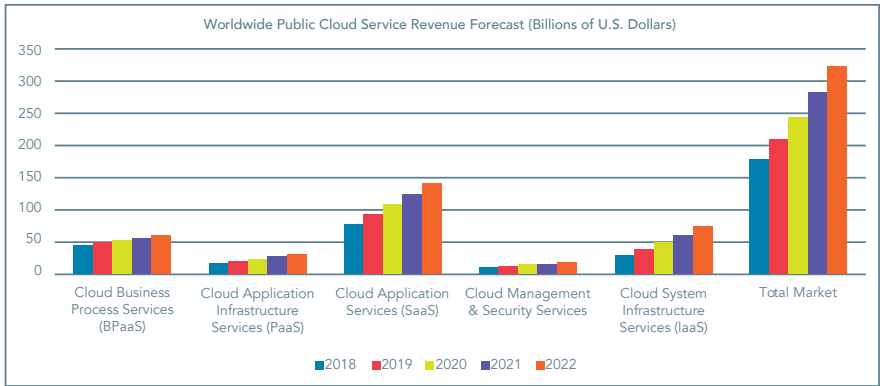
The major reasons for any organization to adopt public cloud are flexibility, scalability, security, flexible pricing and more. The pricing structure includes pay-as-you-go-service, maximum uptime, elastic IT-related capabilities, business agility, and different service models such as IaaS, SaaS, PaaS that help customers control their costs while assuring reliable services.

Based on recent market research, applications which are web-based, microservices, large data lakes used for analytics and research purposes, containers, general business applications and Internet of Things are the prime target for public cloud migration.

Another scenario is where the highly confidential data, critical workloads, legacy applications and business are not ready to be migrated to the public cloud. In such scenarios considering Hybrid & Multi-cloud model is the right fit. Companies should also evaluate the workloads, data and applications that need to be on public cloud and those that will remain in private cloud or on-premise infrastructure.

The blueprint in this whitepaper offers a proven step-by-step approach of cloud migration strategy with all the best practices.

Through 2022, Gartner projects the market size and growth of the cloud services industry at nearly three times the growth of overall IT services.



BENEFITS OF MIGRATING TO PUBLIC CLOUD

There are many benefits of moving to the public cloud, such as scalability, reliability, security, improved analytics, and disaster recovery. However, the most prevalent benefit of public cloud adoption is cost savings and the flexible pricing structure which attracts businesses to adopt public cloud services.

Following are the major public cloud adoption benefits: -

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Cost-effectiveness (Capex to Opex)

The flexible pricing structure is one of the top benefits of the public cloud. Most of the public cloud providers give businesses flexibility pay-as-you-go. It helps businesses, to tightly control their costs by paying for the infrastructure only based on their uses and no upfront cost.

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Scalability & Flexibility

The IT infrastructure can be expanded globally in minutes with no up-front cost (pay-as-you-go pricing) and no dependency on vendors. Generally, in an on-premise environment, the hardware & software requirements and the time taken to execute the projects result in missing of committed timelines. Though the client wishes to expand their business geographically, there is always a reluctance due to the thought that setting up a multi-region infrastructure with all the associated maintenance, time, human, and error control effort is going to be a challenge. The client requires fast application implementation and deployment and focus more on CI/CD while reducing infrastructure overhead. The applications are experiencing increased traffic and becoming difficult to scale resources on the fly to meet the increasing demand.

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Benefits of the latest technology

Tracking and upgrading underlying software is a time consuming, yet an essential process that requires periodic and sometimes immediate upgrades. In the public cloud, some service models similarly handle many administrative tasks such as database backup, systems upgrade, software upgrades, and periodic maintenance, which reduces hassle for customers to maintain the systems. Using such service model customers can achieve their compliance level and manage vulnerabilities.

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Maximum uptime and zero risk failure

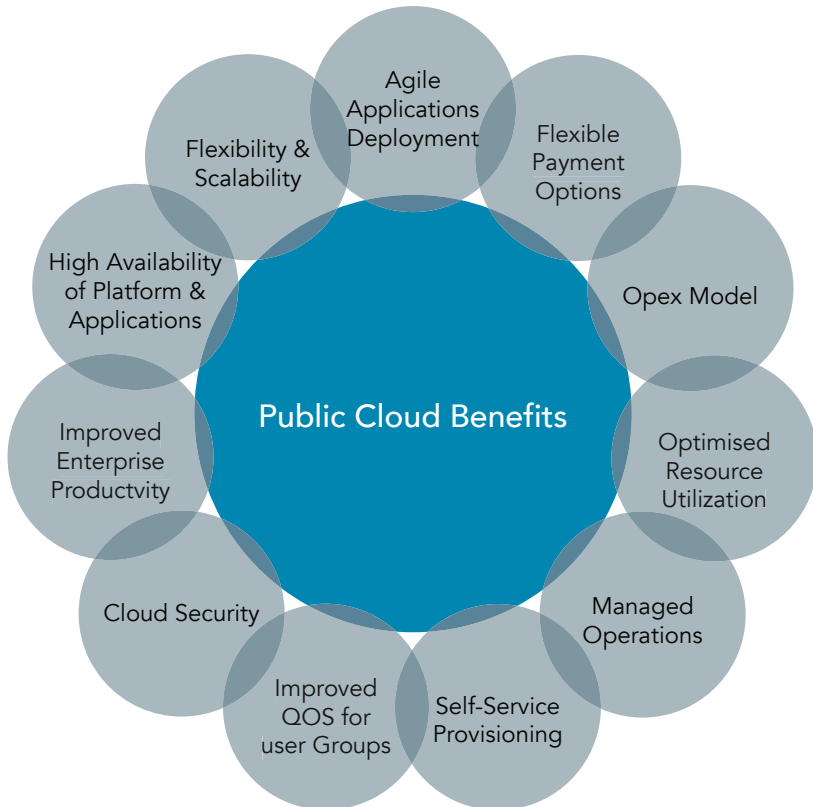
Almost, all public cloud providers guarantee more than 99.9% uptime and zero risk failure. The major cloud providers have a multi-regional presence with more than three availability zones in each region, which helps them maintain the uptime of systems and applications. They also replicate data across the availability zones, which reduces the risk of data loss.



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Cloud security

Cloud security does not change the approach on how to manage security from preventive to detective and corrective actions. However, this helps to perform these activities in a more agile manner. The public cloud providers follow the best security practices by implementing different frameworks keeping, all systems and applications up to date with 100% compliant vulnerability management, which is difficult to manage in an on-premise environment. The major cloud providers hired would have the world's best security expert to manage their systems & data.



KEY PARAMETERS TO BE CONSIDERED FOR CLOUD MIGRATION

Every organization has a diverse set of needs and complexities while planning to adopt public cloud. Following key parameters needs to be considered before the start of any cloud migration journey.

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The business needs

The business needs should always be kept as a priority as all these changes within the organization will impact the business directly or indirectly. Understanding and laying out the business objectives for public cloud adoption is the first and foremost step to be actioned. It is essential to evaluate and understand the present customer problems which cannot be solved with their current IT strategy. It is also important to lay down the benefits anticipated or expected from cloud adoption.

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Choosing the right cloud provider

Choosing the right cloud provider is the first step for any organization planning to adopt public cloud services. This is the most important and thus, the most confusing process. The provider chosen to work with will handle very confidential transactions and will have access and be involved in enhancing the core of the organizations IT strategy. Thus, it is imperative that the partner is chosen with at most cautiousness and evaluation. There are many parameters' s to be considered and comparisons of services (offered by cloud providers) to be made before a customer can decide which cloud provider best suits their business and ethical requirement.

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Cost of cloud migration and tools

Cloud migration is a big project that is time-consuming and involves various phases for any organization. The cost is one of the major factors that impact the decision to take the leap. To estimate the cost of migration and tools, most of the major cloud providers provide cost estimation calculators that help clients to include, estimate and calculate the cost for all tools and services required. This would also include the services of cloud SMEs and the team effort estimations.

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Cloud service model

The public cloud providers today provide different service models such as "Infrastructure as a service(IaaS), Platform as a service(PaaS), software as a service (SaaS)" and the service model should be considered based on the type of compute, data, storage, applications and existing software licenses.

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Cloud migration strategy

The cloud migration strategy has one of the most important roles in any cloud transformation journey and the whole migration project depends on the migration strategy that is adopted. Considering hybrid and multi-cloud helps to avoid vendor lock-in and a Single point of failure is considered the right choice.

According to recent Gartner research, large enterprise customers are adopting at least two cloud providers when running mission critical workloads & applications in the public cloud and will remain predominantly Hybrid in the coming years. There are other benefits as well, e.g., High availability & DR Strategy, Cost differences, Services difference, Data security, etc.

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Integration with the existing application

Any cloud migration within the existing application is extremely critical as they need to integrate with the home application as seamlessly as possible. If the applications are already cloud compliant, Integration with on-premise applications will not be as challenging. A few challenges such as legacy applications which are not compatible with public cloud platform or service model and require re-architecting or re-coding, might require more effort. In such scenarios, application migration strategy plays a significant role.

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Security & Compliance

Since there is a new environment involved in any migration process the most concerning to every organization is the security of data and processes and thus security and compliance must be considered as the most important by implementing appropriate security framework and access control. The public cloud is as secure as an on-premise environment; it goes through many security audits and vulnerability management steps.

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IT personnel training on cloud management

Training the current workforce to adapt and work on the unfamiliar environment is inevitable in any migration. When any modern technology gets implemented or launched in a company, the existing IT personnel are not familiar or comfortable with the latest technology. There must be a plan to train the IT personnel on cloud management areas such as Amazon web services, MS Azure, Google Cloud platform, Oracle Cloud, IBM Cloud, VMware, etc., so the migration is as seamless as possible.

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Managed service partner for cloud management

Finding a single solution for such a strategic movement of cloud and operations is not easy. You need to consider an expert organization to work with you. Choosing a partner to manage cloud infrastructure and applications help an organization meet their SLA, systems uptime and get timely 24x7 support.

KEY CHALLENGES OF CLOUD MIGRATION

The use of public cloud services and technologies are on the rise, as organizations are becoming increasingly aware of the benefits. Every organization has different challenges during their cloud migration journey. Hence, it is crucial to understand these challenges before adopting public cloud services.

Following are the major challenges which may arise during the cloud migration journey:

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People and process

During the public cloud migration, the major challenge isn't the technology. It's the existing staff and processes that must change and adapt. Existing IT personnel are not familiar with public cloud technologies and service model. The questions that everyone is anxious about in such a scenario are would it be safe to move the company workloads to a public cloud, is the public cloud more secure than an on-premise Datacenter, can cloud provider maintain maximum uptime, how will a legacy application be integrated with a public cloud and more. IT Management team that has been managing Systems and application for decades need to understand cloud better to be able to leverage and benefit from it. There is a psychological barrier among the leadership and this is a situation that's difficult to deal.

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Lack of documentation

Projects of this magnitude and significance require legitimate and complete documentation. Due to lack of resources and budgeting, many times the migration documentation is left incomplete. This can cause confusions in the future and without proper documentation, the migration process tends to take longer than expected and often result in missing timelines.

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Hidden dependencies

There are many unforeseen or hidden dependencies in such projects. Identifying application dependencies and sequencing or listing out the applications that need to be moved to the public cloud is extremely important. There should be clarity in which service model would be the right choice for your business. It is also necessary to evaluate if any Re-architecting/Re-engineering is required on the legacy applications.

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Cost and time constraints

To be able to adhere to the set timelines and the estimated cost, it is imperative to determine a few factors correctly. These would include the time required for the migration, the need for Re-architecting/ Re-engineering of the legacy applications, the possibility to use the existing software licenses in the public cloud, allocation of budget to train the IT personals, etc. The other few common points are the cost of migration project & tools for long term use, the accuracy of the cost estimation, the time required for large data migration, possibility to migrate the data over the internet, security during the migration phase, and latency issues during migration.

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Migration strategy and business objectives

Understanding and defining business needs and objectives are critical in a cloud migration project. A cloud migration strategy is one of the most critical areas, developing a complete roadmap of the cloud adoption journey. Choosing the right cloud platform and service model (IaaS, PaaS, SaaS) from top cloud providers is one of a major challenge for IT leadership. Some Cloud services model doesn't fit in with the legacy applications and highly confidential data. It is necessary to understand, evaluate and asses risks of the cloud provider tools and open source.

HOW TO MITIGATE CLOUD MIGRATION CHALLENGES

In this section, the solution is recommended to mitigate the cloud migration challenges (mentioned in the previous section), both in the cloud migration strategy, development stages and for ongoing migration.

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People and process

In most of the organizations, during a deployment or implementation of modern or new technology, there are always challenges with the existing IT personnel and processes. Understanding the existing operational and business processes and how the current governance processes and change management practices are helping to solve the existing challenges is a worthy step to take at this point. Understanding the training requirements of existing staff and providing them with appropriate technical sessions would help them understand the new cloud Services/technology.

Most of the cloud providers are offering free digital training of their product and services, which are generally accessible if you create an account. It's always important to build the IT processes to run the day-to-day operations smoothly. Having structured and well-defined procedure documents in place can help avoid outages and security risks. This also helps the existing IT personnel and new joiners to understand the unfamiliar pristine environment quickly. The psychological barriers of the IT leadership on the adoption of public cloud and the assumptions about the related security issues are also a challenge for many organizations.

The best way to overcome these issues is to provide an initial session providing all details such as the share cost and security benefits, cost

comparison with the on-premise environment, etc., along with a POC/Demo. This can help rest many questions and apprehensions within the organization.

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Lack of documentation

There are always consequences due to Lack of documentation in the IT department due to several reasons. To overcome this problem, it is imperative to prepare proper and complete documents for all projects. This would include creating runbook & procedure documents, LLD of complete cloud project, developing a version control framework, enabling audit checklist that includes document location information, etc. topology changes during runtime.

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Hidden dependencies

It is important to understand the hidden dependencies of applications, data, and workloads. Doing an in-depth analysis of the on-premise environment using different tools in the cloud assessment phase can help identify the hidden dependencies.

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Cost and time constraints

The best way to overcome the challenges around the cost estimation for the complete migration is to get the cost estimation and total cost of ownership using an online calculator which is available from all cloud providers.

This estimate is generally reliable and can be shared with the client. Comparing all the available cloud providers, services models and their uses cases as per business requirement is a step that is imperative. Understanding the existing software licenses and checking on the possibility of mapping the licenses with public cloud services can help mitigate many challenges as you go along your migration journey. Consider a separate budget for training of existing IT personnel on the cloud, enable budget capping within cloud accounts and projects to avoid unexpected charges and enable monitoring for all running cloud services and billing section.

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Developing a migration strategy and business objectives

Having a clear understanding of the business needs and objectives and a well-defined migration strategy are a few very important steps to be considered for any migration project. Understand the current challenges and benefits of cloud migration should also be covered in the assessment phase. Consideration of security and compliance, legacy application, highly confidential data, mission-critical workloads are also critical. More details can be specified in the Plan and Design phase. Cloud providers also offer a well-architected tool which helps to review the state of workloads and compares them to the architectural best practices. These also can be considered.

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Data migration

Having a clear understanding of the business needs and objectives Data migration is another critical area to be handled with at most planning and care. Complete assessment of source databases to understand the database type, and format, understanding the sensitivity of data, calculating the database to estimate the migration efforts and finalizing the target database and migration tools should all be a part of this activity. It is an innovative idea to schedule data migration after business hours to avoid any issues with running applications. Validating the data size and format post migration is also equally important.

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Applications migration and integration

In the application assessment phase, all the on-premise application must be audited with in-depth analysis to understand the application data confidentiality. In the case of Legacy Applications, there could be a scenario where re-architecting or re-coding of applications is required, and this should be planned with the help of the application owner while considering the impact on business. Based on the assessment results SMEs may need to figure out which service model is more suitable or compatible as per the nature of the application and in some cases, there could be a situation where a major public cloud platform or service are not compatible due to which the customers might have to adapt the multi-cloud environment.

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Security & Compliance

Security plays a critical role in any cloud migration project. By implementing security practices right in the initial phase, organizations can avoid the risk by considering below points:

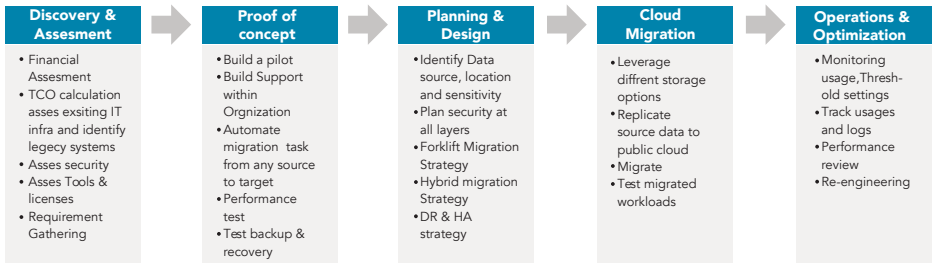
- Providing privileges to users as per their job requirement
- Specifying the complex requirements and mandatory password regeneration on the expiration for all users
- Avoiding the use of Root account in the day to day tasks/ activities
- Maintaining separate accounts for each project
- Setting up separate networks for each project using groups restrict access
- Filtering the incoming, outgoing traffic for VPC
- keypair management
- Consideration of General Data Protection Regulation, as per data transfer location
- Enabling the encryption for database instances as per business requirements
- Use of pre-tested certified tools for migration, deployment and automation activities
- Implementation of security tools as per business requirement
- Monitoring the traffic of all instances and applications as per business requirement
- Enabling the feature for termination protection to avoid accidental termination of critical instances through any automation process



PHASED STRATEGY FOR CLOUD MIGRATION

Moving to the public cloud has become a business necessity for many organizations. And, to make any cloud migration journey successful, appropriate migration strategy plays a leading role.

Any cloud migration project must be divided into phases to make the migration journey a success. Following are the distinct phases that must be considered.



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Discovery and Assessment

Discovery and assessment is the first step to start with cloud migration journey and there are different ways to access on-premise environment. Based on the assessment of IT Financial, Compute, Applications, Data, Storage, Network and Security results, Cloud Architects prepare cloud migration strategy.

Following points must be considered in discovery and assessment phase: -

- **Financial assessment**

- Resources cost to maintain compute, storage, database and application and other technologies, Internet connectivity monthly cost, Facility and Datacenter Maintenance
- Assess existing investment on Hardware and software licenses
- The indirect cost incurred in the form of loss of productivity by customers if IT infrastructure goes down
- To be able to calculate these costs, it is helpful to get all monitoring alerts & logs to determine how often IT infrastructure & Applications went down in the past and for how long. Multiply with an average hourly rate, estimate revenue lost due to downtime
- To compare the cost of existing IT Infrastructure with the public cloud, the use of TCO calculator is recommended and for cost estimation of migration and deployment, there are online web calculators provided by all major cloud providers.
- There are different pricing models available, for example -Pay-as-you-go (No-upfront cost), one year or 3 years contract (Partial upfront) to get more discount on services. All pricing model depends on many factors (Business requirement, Budget, Project duration).

- **Infrastructure assessment**

- Assess on-premise IT infrastructure (Physical, virtual) by using AWS application discovery, Azure prepare or BMC discovery service to get server information, performance data, network connections, services information, and running processes. This can help compile detailed information in a report
- Gap Analysis and identification of challenges in release management, build and deploy process

- **Applications Assessment**
 - Asses existing applications for cloud readiness
 - Application suitability assessment
 - Assess applications which were developed for a traditional on-premise environment and have special requirement or restriction which may prevent them from leveraging all the benefits of public cloud platform
 - Assess legacy applications and understand whether refactoring / re-architecting is needed

- **Data and storage assessment**
 - Assess source database type, size and format for cloud readiness
 - Understand the criticality and sensitivity of data for any GDPR compliance
 - Review all existing software (MS SQL, Oracle, etc.) licenses and see the possibility to re-use (saves cost) in public cloud

- **Security & Compliance assessment**
 - Most of the customers prefer to enhance the current security profile and not change it completely
 - Assess existing security framework and tools
 - Understand existing security and compliance challenges
 - Asses existing security hardening process

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Proof-of-Concept

It is a great idea always to build a small proof of concept (POC) before migrating workloads, data, and applications to the public cloud to get greater clarity and understanding about the challenges that can come up post migration.

- Build migration demo including workloads, database and application
- Perform live migration with client/Customer team
- Test hosted applications, database, and network latency
- Compare application data performance between on-premise and public cloud and share the result
- Address all the real-time challenges of a cloud migration faced in Demo and needs to be worked out
- Cloud provider support evaluation
- Address the cloud migration tools challenges

- **Recommended tools**

- AWS Discovery connector, Import, Discovery agent AWS Application discovery service, BMC Discovery, Azure Migrate, Cloud Sprint, Cloud Health, Migration Assessment

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Plan and Design

In any cloud migration project, planning and design phase is the pillar for the whole project. This phase plays the leading role of the whole migration journey and a successful migration project depends on the right migration strategy. Planning and Design phase includes developing the architecture and roadmap of cloud migration journey and choosing a cost-effective cloud provider, service model, tools, automation and reliable network connectivity solution to migrate the workloads.

Following points should consider in the plan and design phase: -

- **Data migration**

- Critical and sensitive data plan
- Hybrid data migration strategy
- Consider data Protection, make sure all data is encrypted
- Consider GDPR (region specific)
- Plan for Size and type of data that needs to be migrated
- Where in the cloud the data is being migrated to, what tools will be used, what is the target storage
- Anticipating and preparing for outages involved during data migration
- Consider data security policies
- Define all the project management methods and tools to be used during the migration
- Cost and efforts involve

- **Disaster Recovery & HA**

- Disaster recovery solution consideration
- Different Regions and multiple Availability zones as per business needs
- Regular data backup plan
- High availability and fault tolerance of workloads, data and critical applications

- **Network, Security & Compliance**

- Define the best network solution (Direct connect, Express Route, VPN), etc., to connect on-premise and public cloud
- Consider Secured Network connectivity with restrictions in the beginning
- VPC security groups Inbound and outbound ports restriction
- Appropriate Identity and access management policies
- Detective Control
- Incident response
- Monitoring of network and cloud services using available tools (Azure monitor, CloudWatch, Nagios, Zabbix), etc.
- Plan to store all activity logs in cloud
- Make sure to meet all public cloud compliance related policies

- **Hybrid cloud strategy**

- Consider a Hybrid cloud strategy
- This involves migrating some part of workloads, data and applications to the public cloud and the other part remains on-premise
- It lowers risks and organizations can keep their critical workloads, confidential data on-premise
- It can be developed based on the assessment results of workloads, application and data

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Cloud migration

Once the IT infrastructure has been assessed and the plan mapped, the next step is executing the cloud migration. Based on the finalized cloud architecture & design of “Compute, Storage, database, Application, Security frameworks, Network, load balancing” and other base architecture level setups need to be implemented.

- **Workload migration**

- First, migrate Test & Dev environment to cloud where refactoring/ re-architecting is not required
- Lift and Shift workloads from the source environment to the public cloud using any migration tools or export/import
- Migrated resources may need minimal changes to work in public cloud

- Once the Test/Dev environment migration is complete, the testing and monitoring of applications, databases are needed before migrating production workloads to public cloud
 - In the next phase, the first slot of the production environment needs to be migrated as per the defined strategy
 - During Production migration phase all the IT stakeholders should be aware of the planned migration activity to avoid any outages
- Examples: -
- Upgrading the OS from windows older version (2k3,2k8) to the latest version (2k12,2k16,2k19)
 - Older Linux version to newer version of Linux (Redhat, Fedora, Ubuntu, Centos)

- **Data migration**

- Data must be migrated as per the planned architecture, tools and services. Starting from a small database partition and table. once the data is replicated or migrated the objects need to be validated
- In some cases, there could be a scenario wherein downtime is required to migrate the data and get business approval and this maintenance window needs to be considered

Examples: -

- Changing the OS or DB engine.
- Upgrading from Oracle 8 to Oracle 11G
- Migration from MS SQL to MySQL, Amazon Aroura, RDS, Redshift
- Oracle-Exadata to S3, Redshift, RDS
- Changing from RISC to x86

- **Application migration**

- There are diverse ways to migrate an application from on-premise to the public cloud. Based on the planned architecture the applications should be migrated
- Following are the key considerations for application migration
- Lift and Shift of application workloads from the source environment to the public cloud. In this scenario migrated application workloads may need minimal changes to work in public cloud

Examples: -

- VMs' running with packaged software
- Ad hoc, dev and test environments
- Applications without an active roadmap

- Re-architecting is about changing the platform as a part of cloud migration and making cloud optimization. Core architecture changes of the application are not required

Example: -

- Upgrading to the latest release of an application
- Reimage complete application architecture and develop using cloud-native tools. In this scenario, there would be a strong business requirement to add features, scale or performance, which is not possible in an on-premise environment
- Migrate from over-lasting licenses to SaaS model (CRM to Salesforce)
- Decommissioning - Applications which are no longer needed and found during discovery and assessment phase

Example: -

Exchange 2013 to office 365

- Upgrade from Older ticketing tool to ServiceNow

• **Validation and cutover**

- Validate replicated workloads prior to failover activity
- Test failover once the replication is completed
- Once the final failover is completed, make the changes on DNS records and prepare to connect workloads and application
- Test and validate migrated resources compute, database, application with the help of the application owner

• **Monitoring tools integration**

- Monitoring tools integration with cloud services is an important part, which can be performed post the cloud migration, validation and testing phases

• **Recommended tools**

- Azure Site Recovery, Azure StorSimple, Azure DMS, AWS, SMS, AWS DMS, Cloud Sprint, ATAmotion, Import, Cloud Endure, RSync, Snowball, Storage gateway, Velostrata, IBM Lift, Cloudscape, Snowmobile
- Data box, Google Transfer Appliance, STS, RiverMeadow (SaaS Platform), Oracle golden gate, Robocopy
- Monitoring tool "Nagios, pager duty, Datadog, Cloud watch, Azure monitor, Stackdriver"

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Optimization and operation

Optimization and operation is the next area post migration. It is important to ensure that the migrated cloud environment is optimized, and secure. Apart from monitoring and optimization, it is also important to make sure the new cloud environment meets all the required regulatory compliance, as per the company and local governing bodies.

Following point needs to consider in optimization and operation: -

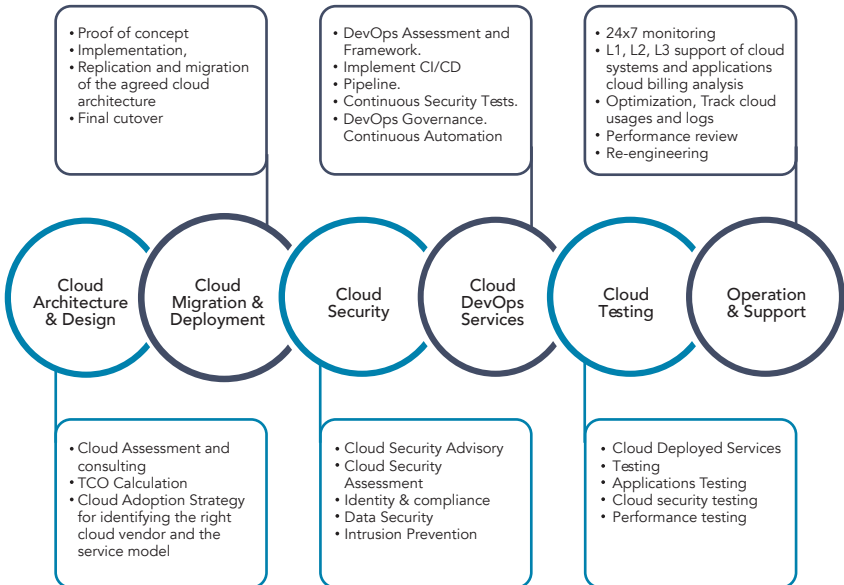
- Establish 24x7 support by on-boarding of cloud engineers on different shifts and monitoring for all hosted cloud resources and applications "Service Monitoring, Application performance monitoring, Resource Inventory Management, Release/Change Management, Reporting and analytics, Business Continuity/ Disaster Recovery, IT Service catalogue"
 - Validation and testing of all security tools, framework, and IAM policies are configured and privileges are granted as per roles, to avoid any security breaches
 - Since all data is stored in the cloud, ensure that all the layers adopt the encryption
 - Another consideration to keep in mind is meeting the ongoing performance and availability benchmarks to ensure RPO and RTO objectives as and if they change
 - Track all uses of cloud resources and enable billing analysis accordingly. Enable monthly billing cap, if required and avoid or eliminate unneeded cost or suboptimal resources
- **Recommended Tools**
 - Azure Cost Management, AWS Cost explorer, Datadog, Nagios, CloudWatch, Azure Monitor, SolarWinds, Zabbix

ALTRAN CLOUD CAPABILITIES

Altran Cloud Engineering services help clients to tackle the most challenging architecture, implementation and operation requirements for cloud-based applications, products and platforms on public, private and hybrid environments.

Further, Cloud Delivery services deliver end-to-end cloud solutions in a cost-effective manner without compromising security and compliance. This includes migration and operations for continuous improvement. Our cloud migration experts combined with domain expertise, vetted approach that aligns with public cloud best practices ensures delivery of all the benefits of migrating to the public cloud. Our Design-led approach ensures that the newly deployed solution is optimized for the new consumption model via elegant and streamlined user and administrative portals. We accompany our clients all along through their migration projects, starting with designing the best strategies and architecture.

Altran Public Cloud Services Include



We're not only the long-term partners with Amazon AWS, Microsoft Azure and IBM Cloud services; we also develop some of the foundational products of their Cloud offerings.

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We are engineering software products for the leading Cloud providers



Strategic Partnership with Amazon Web Services

Amazon 360° Partnership

- Designed & built large scale commercial cloud solutions on top of AWS platform.
- AWS IoT Platform - Competency Partner (1 of 7)
- Technology Partner (25+ Altran Software Frameworks)

AWS Practice

- Full breadth engineering and managed services on AWS platform
- Addressing customer domain challenges leveraging AWS capabilities
- Existing assets – differentiators, enablers/ accelerators/solutions for multiple use cases

AWS Accreditations & Certifications

300 AWS developers & architects

AWS certifications & accreditations:

- Business Professional Accreditations,
- Technical Professional Accreditations,
- Associate Level Certifications and
- Professional Level Certifications

Altran Software & Digital has been partnering with AWS and building several solutions for Enterprises on AWS Platform. We interacted with their delivery teams and were impressed by their ability to build and scale agile development*



- Member of Microsoft Red Carpet Azure IoT program
- Silver partner for cloud application development
- Azure certifications with MCSD in Azure Architect



- Early adopter / partner of Google Cloud Mobile Data API sharing platform for
- Google Go
- Solutions and Projects leveraging Kubernetes



- 15-year partnership with Oracle Communications
- Oracle IoT implementation partner



- IoT implementation partner
- SAP HANA porting and deep integration



- Contributions to the OpenStack Foundation
- Open Source contribution



- Partnership to expand IBM's Cloud Product Portfolio through New Digital Experiences and Intelligent Automation

CONCLUSION

Public cloud brings scalability, Elasticity, Agility and reliability to the organizations. To leverage the advantages of the benefits of the public cloud, organizations should follow a phase-driven migration strategy. Whether it is a typical 3-tier web application, nightly batch process, or complex backend processing workflow. Most applications can be moved to the public cloud.

The organization must take into consideration what kind of Data and applications they have and what result they aim to achieve with cloud migration. Migrate a meaningful portion - not necessarily all.

A migration project might consist of moving a single data center, a collection of data centers or some other portfolio of a system, that is larger than a single application environment. Decisions made by the organizations will determine the choice of methodology and how the migration will be executed.

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About Altran

Altran ranks as the undisputed global leader in Engineering and R&D services (ER&D), following its acquisition of Aricent. The company offers clients an unmatched value proposition to address their transformation and innovation needs. Altran works alongside its clients, from initial concept through industrialization, to invent the products and services of tomorrow. For over 30 years, the company has provided expertise in aerospace, automotive, defense, energy, finance, life sciences, railway and telecommunications. The Aricent acquisition extends this leadership to semiconductors, digital experience and design innovation. Combined, Altran and Aricent generated revenues of €2.9 billion in 2018, with some 47,000 employees in more than 30 countries.

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