***[POLL]***

What do you think is the “Top Reason” to go to Cloud ?

Choose top 2 >> Display poll results in bar chart / %

* Executive Mandate
* Cost Savings
* Agility
* Innovation
* IT Modernization
* Standardization
* Faster time to market for business

***[SLIDE]***

**Warren Bennis: "Leadership is the capacity to translate vision into reality.”**

[**Bill Gates**](http://www.forbes.com/profile/bill-gates/)**: "As we look ahead into the next century, leaders will be those who empower others."**

**John Maxwell: "Leadership is influence - nothing more, nothing less."**

*Having skin in the game*

*Challenging the status quo*

*Leading a Cloud Transformation is in a similar way .. lots of challenges, people don’t want to go ther because of unknows*

*As leaders understand the potential it can bring to transform your business*

*Establishing Direction // Motivating & Inspiring*

***[POLL]***

“Your Role” today in the Cloud Ambition is?

* Influence teams
* Influence stakeholder
* Experiment
* Engage in a dialogue with business
* Challenge the status quo

***[SLIDE]***

How to get started

*Review your app portfolio, what are business and IT challenges,*

*Do you know the 3 most important things that concern you or you wish to leverage thru cloud migration? What is your business vision ? What are your technology constraints ? What are you data constraints?*

Building a business case

* Business agility
* Operational resilience
* Cost avoidance
* Obsolecence
* New features
* Workforce productivity
* Security

Questions to ask your tech team

Automation – Pipelines , Infrastructure

Packaging -

Modern practices – Micro services , Monitoring, Logging

* How quickly can you deploy a business change in Production?
* How long do you take to complete your testing (Regression, Integration )
* What is your MTTR (Mean time to Recovery) / from failure ?

***[SLIDE]***

What are the Cloud Migration Drivers that you recognize ?

* **Cost reduction/avoidance:** cloud technology, if implemented correctly, helps cut down the cost of your IT. This group includes license renewal, old hardware replacement, the need for increased operational efficiency, and similar cases.
* **Risk reduction:** cloud technology helps reduce risks and satisfy all sorts of regulatory requirements and compliances. This group includes regulatory requirements, end of life for hardware components, audit compliance, and similar cases.
* **Business transformation:** cloud technology helps simplify business transformation and increase the speed of innovation and agility.

***[SLIDE]***

**Migration Strategies**

If the application is not a good candidate for migration, we have three available strategies.

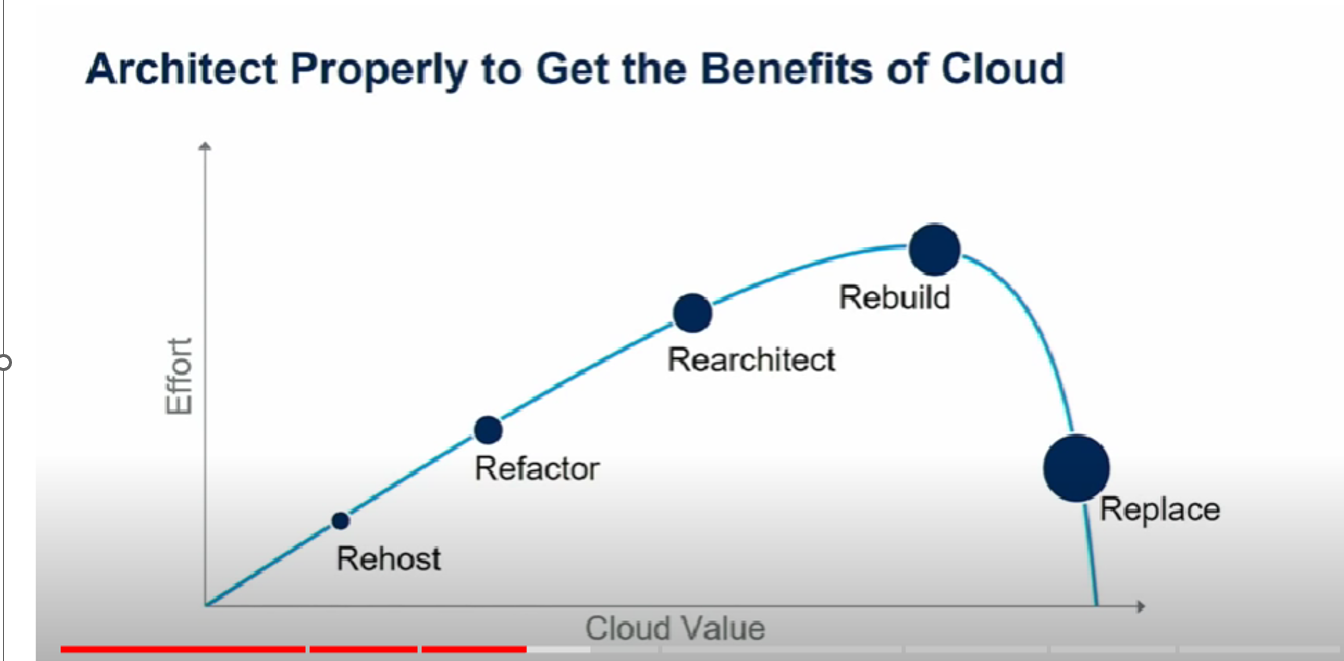
* **Re-purchase:** we are finding an alternative software-as-a-service solution to move away from perpetual licenses.
* **Retire:** application is no longer needed or in use.
* **Retain:** application remains as it is.

If the application is a good candidate for migration, we have three available strategies.

* **Re-host:** also known as 'lift and shift,' applications are moved without changes. Re-host is a suitable method for large-scale, legacy migrations where organizations want to meet business objectives quickly.
* **Re-platform:** also known as 'lift, tinker, and shift,' applications are moved with a few cloud optimizations to achieve a tangible benefit. For example, a lot of time spent managing database instances can be saved by migration to a database-as-a-service platform like Amazon Relational Database Service (Amazon RDS).
* **Re-factor:** the method of re-imagining how the application is architected and developed using cloud-native features. It is driven by a strong need for new features, scaling, or performance that would be very difficult to achieve in the existing environment.

***[SLIDE]***

App Migration Patterns



Rehost == Okay

Replatform

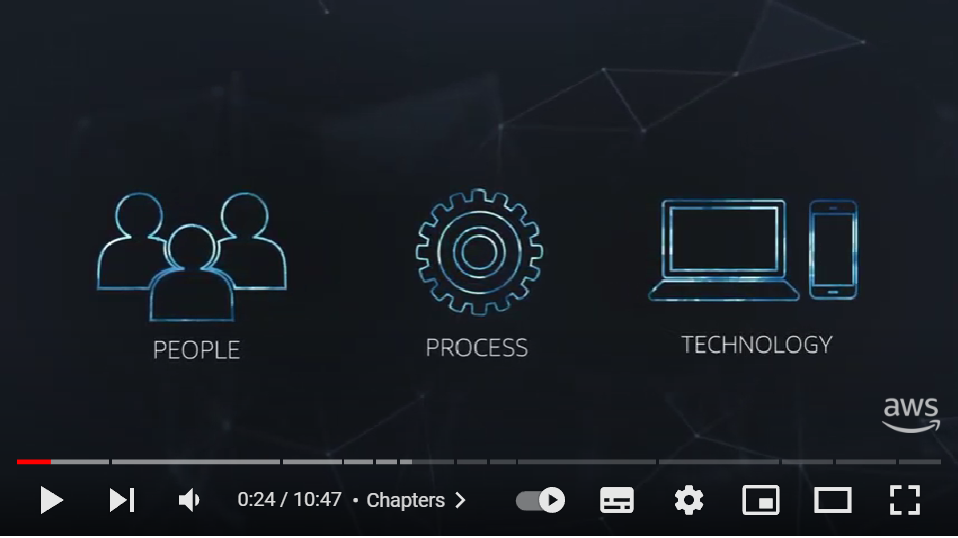
Refactor

Rewrite

Retire / Retain

***[SLIDE]***

Adopting CLOUD involves People / Process / Technology and until these aspects are dealt wholistically its difficult to reap all the benefits



People – How do we Reskill our teams, leaders , business to reap benefits

* What kind of roles are needed and what does it mean from a Career planning
* Compensation

Process –

* What is the operating model ?
* Who will handle Infra issues in the Cloud
* Controls to manage cost
* What data can go to cloud and who validates this ?
* What regulatory aspects to keep in mind

Technology –

* How do I migrate to cloud and what technology decisions
* Architecture and design decisions

***[COST OPTIMIZATION TECHNIQUES]***

One of the greatest benefits of running in the cloud is being able to scale up and down to meet demand and reduce operational expenditures

Most organizations move their system to the cloud to reduce costs. A common mistake that many enterprises make when moving to the cloud is trying to follow the fastest path. They simply lift and shift the applications they were using from their in-house data center to a [cloud infrastructure](https://www.bmc.com/blogs/cloud-infrastructure/).

Cloud cost optimization is a new discipline that organizations need to deploy cloud computing effectively

Pricing Calculator - <https://azure.microsoft.com/en-us/pricing/calculator/?service=cost-management>

* **BUILD A CULTURE OF COST AWARENESS**
* Rightsize your compute resources Proactively
  + We often see cases where developers and application managers—with only the best intentions in mind—have not only [selected the incorrect instance size, but also suboptimal instance families altogether](https://www.densify.com/resources/ec2-instance-types)—leading to oversized instances that just do not make sense. In other cases, we see developers spin up compute resources in the cloud, forget about them, and leave them running idle.
* Choose the Right Storage Type
* Your Cloud Operating Model enables you to rapidly develop, experiment, and build up infrastructure. One of the principles of running intelligently the cloud is to leverage infrastructure as code (IaC) tools such as AWS CloudFormation or HashiCorp Terraform to automate infrastructure provisioning—and avoid manual tasks and errors in the process.

The best way to rightsize your infrastructure is to fully automate the management process and make it a seamless part of [your cloud continuous integration and continuous deployment (CI/CD) pipeline](https://www.densify.com/resources/poster-continuous-integration-delivery-cicd-framework).

development systems that are used only during the workday. You can set up automation to turn off these systems during nights and weekends so that you don’t pay for the 60 percent of the time when no one is using the systems

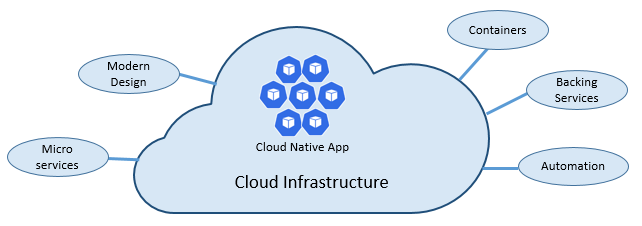
* Right Architetcure patterns / Design your applications for Cloud
  + Cloud Native
  + With environments that span clouds and on-premises environments, getting clear and comprehensive visibility into your network usage is key
  + Collocate applications / Database … reduce Network IO/ Know where your user is / What are the Resiliency requirements
  + Know your workload patterns / Cloud is built for Elasticity

***[WHAT IS CLOUD NATIVE]***

Cloud-native architecture and technologies are an approach to designing, constructing, and operating workloads that are built in the cloud and take full advantage of the cloud computing model.

Cloud native is about speed and agility.

These techniques enable loosely coupled systems that are resilient, manageable, and observable. Combined with robust automation, they allow engineers to make high-impact changes frequently and predictably with minimal toil.



**Modern Design -** principles, patterns, and best practices . 12 Factor Application

**Containers** provide portability and guarantee consistency across environments. By encapsulating everything into a single package, you isolate the microservice and its dependencies from the underlying infrastructure

**Microservices** - a popular architectural style for constructing modern applications.

Built as a distributed set of small, independent services that interact through a shared fabric, microservices share the following characteristics:

* Each implements a specific business capability within a larger domain context.
* Each is developed autonomously and can be deployed independently.
* Each is self-contained encapsulating its own data storage technology, dependencies, and programming platform.
* Each runs in its own process and communicates with others using standard communication protocols such as HTTP/HTTPS, gRPC, WebSockets, or [AMQP](https://en.wikipedia.org/wiki/Advanced_Message_Queuing_Protocol).
* They compose together to form an application.

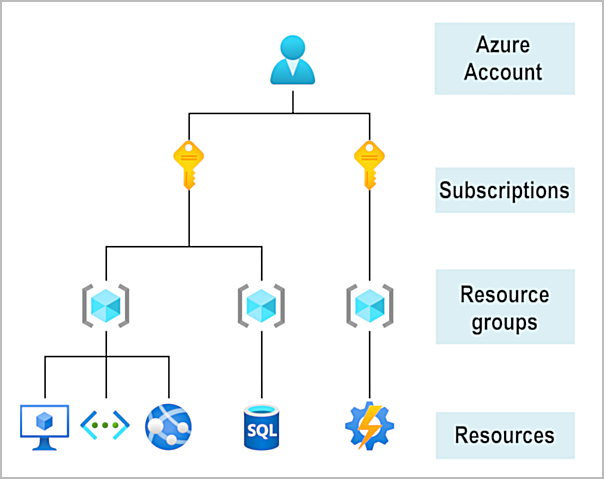
Cloud-native systems depend upon many different ancillary resources, such as data stores, message brokers, monitoring, and identity services. These services are known **as**[**backing services**](https://12factor.net/backing-services)**.** A best practice is to treat a backing service as an **attached resource**, dynamically bound to a microservice with configuration information (a URL and credentials) stored in an external configuration**. With this pattern, a backing service can be attached and detached without code changes**

**AUTOMATION** - How do you provision the cloud environments upon which these systems run? How do you rapidly deploy app features and updates? How do you round out the full picture?

Enter the widely accepted practice of [Infrastructure as Code](https://learn.microsoft.com/en-us/devops/deliver/what-is-infrastructure-as-code), or IaC.

With IaC, you automate platform provisioning and application deployment. You essentially apply software engineering practices such as testing and versioning to your DevOps practices. Your infrastructure and deployments are automated, consistent, and repeatable.

[LAB SLIDE]



<https://learn.microsoft.com/en-us/training/modules/describe-core-architectural-components-of-azure/3-get-started-azure-accounts>

**[Slide LAB – Create a Virtual Machine]**

With Azure Virtual Machines (VMs), you can create and use VMs in the cloud. VMs provide infrastructure as a service (IaaS) in the form of a virtualized server

When you provision a VM, you’ll also have the chance to pick the resources that are associated with that VM, including:

* Size (purpose, number of processor cores, and amount of RAM)
* Storage disks (hard disk drives, solid state drives, etc.)
* Networking (virtual network, public IP address, and port configuration)

CONTAINERS

<https://medium.com/@kmdkhadeer/docker-get-started-9aa7ee662cea>