## What is cloud?

Cloud - Cloud computing is an information technology (IT) paradigm, a model for enabling ubiquitous access to shared pools of configurable resources (such as computer networks, servers, storage, applications and services, which can be rapidly provisioned with minimal management effort, often over the Internet.

Cloud Native – An application that is architected to run using one or more cloud providers’ infrastructure and/or software.

AWS - Amazon’s cloud tool suite delivering infrastructure, platform or software as a service. Also might be used as a synonym for “cloud”.

Azure - Microsoft’s solution for cloud applications.

## What does cloud mean for TR?

* Reduced time-to-market
* Cost reductions
* Innovation
* Increased security
* Addresses many data residency and multi-region application delivery issues

## What is Nuvola?

Nuvola – The TR-wide Hub-based community dedicated to helping TR build and maintain cloud applications.

* Getting Started & Project Intake - <https://thehub.thomsonreuters.com/docs/DOC-2142257>
* Standards Definitions - <https://thehub.thomsonreuters.com/docs/DOC-2142258>
* Additional Information for Developers and Application Owners
  + <https://nuvola-analytics.int.thomsonreuters.com/>

[Cloud Center of Excellence](https://thehub.thomsonreuters.com/docs/DOC-2281007) (CCoE) – A group of architects and developers defining what cloud computing means for TR, maintaining corporate account details and building tools that have general application for all TR products running in the cloud.

* Application Review
  + [Permit to Build](https://thehub.thomsonreuters.com/docs/DOC-2279249)
  + [Permit to Operate](https://thehub.thomsonreuters.com/docs/DOC-2323323)
* Standards enforcement
* AWS/Azure support and consulting gateway
* Cloud Application Tooling

## AWS Key Technologies

[EC2](https://aws.amazon.com/ec2/) (Elastic Compute Cloud) – a web service that provides secure, resizable compute capacity in the cloud.

[S3](https://aws.amazon.com/s3/) (Simple Storage Service) – store and retrieve any amount of data from anywhere.

[IAM](https://aws.amazon.com/iam/) – Identity Access Management. The user, group and role service for accessing AWS resources.

[CodePipeline](https://aws.amazon.com/codepipeline/) – Continuous integration and deployment tool.

[Lambda](https://aws.amazon.com/lambda/) – A “serverless” architecture tool to allow for deployment and execution of services without explicit server operational concerns.

[Databases](https://aws.amazon.com/products/databases/)

* Traditional - <https://aws.amazon.com/rds/>
  + Aurora - <https://aws.amazon.com/rds/aurora/>
* NoSQL - <https://aws.amazon.com/nosql/>
  + Column, document, graph
  + Dynamo - <https://aws.amazon.com/dynamodb/>

Networking

* [VPC](https://aws.amazon.com/vpc/) (Virtual Private Cloud) – Logical partition of AWS services defined within a virtual network.
* [Region](http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-regions-availability-zones.html) – Geographic location for an Amazon data center (see also <https://thehub.thomsonreuters.com/videos/42378>).
* [Availability Zone](http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-regions-availability-zones.html) – An isolated location within a region (analogous to TR modules - see also <https://thehub.thomsonreuters.com/videos/42378>).
* [Route 53](https://aws.amazon.com/route53) – DNS service to allow for multi-region routing and redundancy.

Management Tools

* [CloudFormation](https://aws.amazon.com/cloudformation/) – Template approach to building and maintaining AWS resources.
* [CloudWatch](https://aws.amazon.com/cloudwatch/) – Monitoring service for AWS resources.
  + [Sumo Logic](https://www.sumologic.com/) – Log aggregation and metric visualization.
  + [Datadog](https://thehub.thomsonreuters.com/docs/DOC-2313830) – Preferred infrastructure monitoring solution.
* [CloudTrail](https://aws.amazon.com/cloudtrail/) – Logging solution for services and account activity.

Container Management

* [Docker](https://www.docker.com/) – Leading container management solution. Containers are a way to package software in a format that can run isolated on a shared operating system. Unlike VMs, containers do not bundle a full operating system - only libraries and settings required to make the software work are needed.
* [ECS](https://aws.amazon.com/ecs/) (EC2 Container Service) – Supports running Docker containers on a managed cluster of EC2 instances.
* [ECR](https://aws.amazon.com/ecr/) (EC2 Container Repository) – container registry that makes it easy for developers to store, manage, and deploy Docker container images.

## Tools

* AWS Provisioned M-Account
* [TR Cloud Tool](https://git.sami.int.thomsonreuters.com/enterprise-cloud/cloud-tool) - A cross-platform, Python-based command line tool for developers to access resource in the AWS cloud.

## Learning Resources

AWS Tutorials - <https://aws.amazon.com/getting-started/>

A Cloud Guru - <https://acloud.guru/>

Nuvola Learning Page: <https://thehub.thomsonreuters.com/groups/nuvola/pages/learn>

Nuvola Learning Pathway: <https://thehub.thomsonreuters.com/docs/DOC-1694842>

Microsoft Teams – [Nuvola Team](https://teams.microsoft.com/l/team/19%3af61aecd0aba9468e9c5cc8d8ecc9f738%40thread.skype/conversations?groupId=3ca48a30-4b00-4002-b4af-20451a6b6896&tenantId=62ccb864-6a1a-4b5d-8e1c-397dec1a8258)