applied cloud computing

Implementation of Migrating Citrix Dr on Cloud

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About our client

The client is one of the leading private sector banks with an expanding presence across the country. It currently services over 10.66 million customers through a network of 500 branches. It is listed both on NSE and BSE.

Problem Statement: -

The client had a requirement of setting up Citrix Dr on the cloud because they had a resource crunch on-premise. They wanted a scalable solution to provide the resources on the cloud.

Solution:-

Citrix Dr migration from on-premise to AWS via the Application migration service and cloud endure.

Services: -

- EC2
- S3
- Application Load Balancer
- FSX Service – Shared Storage
- VPC

Amazon EC2:-

Elastic Compute Cloud (EC2) is an important aspect of the Amazon Web Services ecosystem. In the AWS cloud, EC2 provides on-demand, scalable computing capability. Amazon EC2 instances eliminate the upfront hardware expenditure and eliminate the requirement to maintain rented hardware. It allows you to create and launch applications more quickly.

The following features are available using Amazon EC2:

- Instances are virtual computing environments
- Amazon Machine Images (AMIs) are preconfigured templates for your instances that package the parts you need for your server (including the operating system and additional software)
- Instance kinds are different configurations of CPU, memory, storage, and networking capabilities for your instances
- Key pairs are used to safeguard login information for your instances (AWS stores the public key, and you store the private key in a secure place)
- Instance store volumes are storage volumes for transitory data that is destroyed when you stop, hibernate, or terminate your instance

Amazon VPC:-

A commercial cloud computing service called Amazon Virtual Private Cloud (VPC) offers consumers access to a logically isolated portion of the Amazon Web Services (AWS) Cloud. Enterprise clients can connect to the Amazon Elastic Compute Cloud via a virtual private network based on IPsec (EC2). Customers can choose IP addresses from one or more subnets, in contrast to regular EC2 instances, where Amazon assigns both internal and external IP numbers. By letting the user select which AWS resources are accessible to the public and which are not, VPC offers far more granular security management. According to Amazon, it's a support for the hybrid approach but also aims to balance off the rising demand for private clouds.

Features of VPC:-

Flow logs: -

To obtain operational visibility into your network dependencies and traffic patterns, spot abnormalities and stop data leakage, and troubleshoot network connectivity and configuration issues, you can watch your VPC flow logs delivered to Amazon Simple Storage Service (Amazon S3) or Amazon Cloud Watch.

Address Manager for IP (IPAM): -

You can more easily plan, track, and monitor IP addresses for your AWS workloads with IPAM. IPAM automates the assigning of IP addresses to your Amazon VPC, negating the need for custom planning software or spreadsheets. By displaying IP utilization across many accounts and VPCs in a consolidated operational view, it also improves your network's observability.

Routing of Ingress: -

This functionality allows you to direct all incoming and outgoing traffic to/from an internet gateway or virtual private gateway to the elastic network interface of a particular Amazon EC2 instance. Set up your virtual private cloud such that before any traffic reaches your business workloads, it is routed through a gateway or an Amazon EC2 instance.

Analyzer for Network Access: -

You can use Network Access Analyser to check that your AWS-based network complies with your network security and compliance requirements. Your network security and compliance standards can be established using Network Access Analyser, which also identifies unauthorized network access that does not adhere to your rules.

Amazon S3: -

Amazon S3, also known as Amazon Simple Storage Service, is a web service interface-based object storage service provided by Amazon Web Services (AWS). The scalable storage technology that Amazon.com uses to power its e-commerce network is also used by Amazon S3. Because Amazon S3 can store any sort of object, it may be used for a variety of things, including hybrid cloud storage, backups, disaster recovery, data archiving, and data lakes for analytics.

Scalability, high availability, low latency, and high durability are all goals of the object storage architecture used by Amazon S3 to handle data.

Amazon S3's basic storage units are objects that are arranged into buckets. A special key that the user has assigned identifies each object. The Amazon console can be used to manage the buckets.

Benefits of Amazon S3: -

Reliable Security: -

Amazon S3 buckets can only be used by the identity that generated them when they are first created (IAM policy grants are the exception). You have complete control over how, where, and by whom the data can be routinely accessed. You can define access rights for each file, each bucket, or via IAM (Identity access management). You may ensure that there is no unwanted access to your data by using this set of guidelines and permissions.

All-time Availability: -

Every user of Amazon S3 may utilise the same highly scalable, dependable, quick, and affordable data storage infrastructure that Amazon employs to power its own worldwide network of websites. S3 Standard is intended to be available 99.99 percent of the time, and Standard – IA is intended to be available 99.9 percent of the time. Both are supported by the tight adherence by Amazon to the Amazon S3 Service Level Agreement.

Very Low cost: -

With Amazon S3, you just pay for the data you use, which works out to $0.022 per gigabyte and around $0.0125 per gigabyte for occasional use. As Amazon Glacier is much less expensive ($0.004 / GB), you can design policies to automatically shift the data to the infrequent access location.

Ease of Migration: -

The very user-friendly online interface of Amazon S3 eliminates the tedious tasks of upholding security, optimising storage classes, and effectively managing data transport. You can setup the Amazon S3 inventory and define its own replication rules and lifetime policies. To get a better look at your storage, you can also configure request metrics and storage class analysis with a variety of filters.

Application Load Balancer (ALB): -

The incoming traffic is automatically split among numerous targets, including EC2 instances, containers, and IP addresses in one or more Availability Zones, thanks to elastic load balancing. It keeps track of the wellbeing of the registered targets, only sending traffic to those that are in good shape. As your incoming traffic fluctuates over time, elastic load balancing scales your load balancer. The great majority of workloads can be scaled automatically by it.

Application Load Balancer Components:-

The sole point of contact for clients is a load balancer. EC2 instances and other targets in different Availability Zones are some examples of the targets that the load balancer distributes incoming application traffic among. This makes your application more accessible. You modify your load balancer by adding one or more listeners.

Using the protocol and port that you set, a listener monitors for connection requests from clients. How the load balancer sends requests to its registered targets depends on the rules that you specify for a listener. A priority, one or more actions, and one or more conditions make up each rule. A rule's actions are carried out when its requirements are satisfied. For each listener, you must set a default rule. Additional rules are optional.

Each target group uses the protocol and port number that you define to route requests to one or more registered targets, such as EC2 instances. A target can be registered with various target groups. Each target group can have its own set of health checks configured. All targets registered to a target group that is specified in a listener rule for your load balancer are subject to health checks.

Amazon FSx: -
With feature sets for workloads like Windows-based storage, high-performance computing (HPC), machine learning, and electronic design automation, Amazon FSx gives you native compatibility with third-party file systems (EDA).

As Amazon FSx automates time-consuming administration activities like hardware provisioning, software configuration, patching, and backups, you don't have to worry about managing file servers and storage.

The file systems become even more beneficial for a wider range of applications thanks to Amazon FSx, which combines them with cloud-native AWS services.

You have a choice of four file systems with Amazon FSx:

Applications running on Windows can use the Amazon FSx for Windows File Server:-

·For compute-intensive workloads, use Amazon FSx for Lustre
·For NetApp ONTAP, use Amazon FSx
·For OpenZFS, use Amazon FSX

Details and Benefits: -

High availability:- Amazon FSx continuously checks for hardware failures, automatically replaces infrastructure components in the event of a failure, and replicates your data within the Availability Zone (AZ) it resides in (which you specify during creation) to protect it from component failure.

Multi-AZ: - Amazon FSx provides a multiple availability (AZ) deployment option that aims to keep data accessible even when an AZ is down. Any changes made to your file system's disc are synchronously replicated across AZs to the standby in multi-AZ file systems,

ABOUT ACC

ACC is an AWS Advance Partner with AWS Mobility Competency. Awarded The Best BFSI industry Consulting Partner for the year 2019, ACC has had several successful cloud migration and application development projects to its credit.

Our business offerings include Digitalisation, Cloud Services, Product Engineering, Big Data & Analytics and Cloud Security. ACC has developed several products to its credit. These include Ottohm – Enterprise Video and OTT Platform, Atlas API – API Management and Development Platform, Atlas CLM – Cloud Life Cycle Management, Atlas HCM – HR Digital Onboarding and Employee Management, Atlas ITSM – Vendor Onboarding and Service Management and Smart Contracts – Contract Automation and Management.

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