Analytics

Amazon Athena – Released November 30, 2016

- An interactive query service that makes it easy to analyze data in Amazon S3 using standard SQL.
- Athena is serverless so there is no infrastructure to manage

Amazon CloudSearch – Released April 11, 2012

- Makes it simple and cost-effective to set up, manage, and scale a search solution for your website or application.

Amazon Elasticsearch Service – Released October 1, 2015

- Makes it easy for you to deploy, secure, and operate Elasticsearch at scale with zero down time
- Offers open-source Elasticsearch APIs, managed Kibana, and integrations with Logstash and other AWS Services, enabling you to securely ingest data from any source and search, analyze, and visualize it in real time.

Amazon EMR – Released April 2009

- Provides a managed Hadoop framework that makes it easy, fast, and cost-effective to process vast amounts of data across dynamically scalable Amazon EC2 instances.
- Securely and reliably handles a broad set of big data use cases, including log analysis, web indexing, data transformations (ETL), machine learning, financial analysis, scientific simulation, and bioinformatics.

Amazon Kinesis – Released December 16, 2013

- Makes it easy to collect, process, and analyze real-time, streaming data so you can get timely insights and react quickly to new information
- Offers key capabilities to cost-effectively process streaming data at any scale, along with the flexibility to choose the tools that best suit the requirements of your application
- You can ingest real-time data such as video, audio, application logs, website clickstreams, and IoT telemetry data for machine learning, analytics, and other applications.

Amazon Redshift – Released February 14, 2013

- A fast, scalable data warehouse that makes it simple and cost-effective to analyze all your data across your data warehouse and data lake.
- Delivers ten times faster performance than other data warehouses by using machine learning, massively parallel query execution, and columnar storage on high-performance disk

Amazon Quicksight – Released November 15, 2016

- Makes it easy to deliver insights to everyone in your organization
- Lets you easily create and publish interactive dashboards that include ML Insights.
    - Dashboards can then be accessed from any device, and embedded into your applications, portals, and websites.

AWS Data Pipeline – Released December 2012

- A web service that helps you reliably process and move data between different AWS compute and storage services, as well as on-premises data sources, at specified intervals
- You can regularly access your data where it's stored, transform and process it at scale, and efficiently transfer the results to AWS services
- Helps you easily create complex data processing workloads that are fault tolerant, repeatable, and highly available.

AWS Glue – Released August 14, 2017

- Extract, transform, and load (ETL) service that makes it easy for customers to prepare and load their data for analytics
- You can create and run an ETL job with a few clicks in the AWS Management Console. You simply point AWS Glue to your data stored on AWS, and AWS Glue discovers your data and stores the associated metadata (e.g. table definition and schema) in the AWS Glue Data Catalog

Amazon Managed Streaming for Kafka – Announced November 29, 2018

- Makes it easy for you to build and run applications that use Apache Kafka to process streaming data
- An open-source platform for building real-time streaming data pipelines and applications

- You can use Apache Kafka APIs to populate data lakes, stream changes to and from databases, and power machine learning and analytics applications.

AWS Lake Formation – Released August 8, 2019

- Makes it easy to set up a secure data lake in days.
- Lake Formation collects and catalogs data from databases and object storage, moves the data into your new Amazon S3 data lake, cleans and classifies data using machine learning algorithms, and secures access to your sensitive data.

AWS Data Exchange – Released November 13, 2019

- A service that makes it easy for AWS customers to find, subscribe to and use third-party data in the cloud.

Application Integration

Amazon EventBridge – Released July 11, 2019

- A serverless event bus that connects applications together using data from your own apps, SaaS apps, and AWS services.
- An event is a signal that a system's state has changed (e.g. a change in the status of a customer support ticket).
- You can set up routing rules to determine where to send your data to build application architectures that react in real-time to all of your data sources.

AWS Step Functions – Released December 1, 2016

- Let's you coordinate multiple AWS services into serverless workflows so you can build and update apps quickly
- You can design and run workflows that stitch together services such as AWS Lambda and Amazon ECS into feature-rich applications.

Amazon Simple Queue Service (SQS) – Released November 5, 2012

- Message queuing service that enables you to decouple and scale microservices, distributed systems, and serverless applications.
- Eliminates the complexity and overhead associated with managing and operating message oriented middleware, and empowers developers to focus on differentiating work.

- Using SQS, you can send, store, and receive messages between software components at any volume, without losing messages or requiring other services to be available

Amazon Simple Notification Service (SNS) – Released April 7, 2010

- Durable, secure, fully managed pub/sub messaging service that enables you to decouple microservices, distributed systems, and serverless applications
- Provides topics for high-throughput, push-based, many-to-many messaging

Amazon MQ – Released November 28, 2017

- Managed message broker service for Apache ActiveMQ that makes it easy to set up and operate message brokers in the cloud.
- Reduces your operational load by managing the provisioning, setup, and maintenance of ActiveMQ, a popular open-source message broker

Amazon AppSync – Released April 13, 2018

- Simplifies application development by letting you create a flexible API to securely access, manipulate, and combine data from one or more data sources
- You can build scalable applications, including those requiring real-time updates, on a range of data sources such as NoSQL data stores, relational databases, HTTP APIs, and your custom data sources with AWS Lambda.

Amazon AppFlow – Released April 2020

- No code integration for SaaS applications and AWS services – you can securely transfer data between SaaS applications like Salesforce, Slack, and ServiceNow, and AWS services.
- Can be used to set up data flows in minutes with no coding required.
- Easily scales up so there's no need to plan or provision resources giving you the ability to move large volumes of data without having to break it down into numerous batches.
- Automatically encrypts data in motion reducing exposure to security threats.

- You can run data flows at nearly any scale at the frequency you choose.

AR & VR

Amazon Sumerian – Released May 15, 2018

- Lets you create and run virtual reality (VR), augmented reality (AR), and 3D applications quickly and easily without requiring any specialized programming or 3D graphics expertise
- You can build highly immersive and interactive scenes that run on popular hardware such as Oculus Go, Oculus Rift, HTC Vive, HTC Vive Pro, Google Daydream, and Lenovo Mirage as well as Android and iOS mobile devices

AWS Cost Management

AWS Cost Explorer -Released April 8, 2014

- Lets you visualize, understand, and manage your AWS costs and usage over time.
- Creates custom reports that analyze cost and usage data, both at a high level and for highly-specific requests sashbAWS Cost Explorer Forecasting

AWS Budgets — Released June 29, 2015

- Set custom budgets that alert you when your costs or usage exceed (or are forecasted to exceed) your budgeted amount
- Set RI utilization or coverage targets and receive alerts when your utilization drops below the threshold you define

Reserved Instance Reporting – Released December 2016

- Using these reports, you can set custom RI utilization and coverage targets, visualize how well you are tracking towards your goals, and access information associated with your savings as compared to On-Demand prices.
- From there, you can refine the underlying data using the available filtering dimensions to grain greater insight into your reservations.

AWS Cost and Usage Report – Release December 16, 2015

- Lists AWS usage for each service category used by an account and its IAM users in hourly or daily line items, as well as any tags that you have activated for cost allocation purposes.

Savings Plans – Released November 6, 2019

- A flexible pricing model that provides customers with savings of up to 72% on committed usage for EC2 and Fargate.

Blockchain

Amazon Managed Blockchain – Released April 30, 2019

- Often used to solve two types of customer needs
    - 1- multiple parties work with a centralized, trusted authority to maintain a complete and verifiable record of transactions
    - 2 – multiple parties transact in a decentralized manner without the need for a centralized, trusted authority.
- Makes it easy to setup, deploy, and manage scalable blockchain networks, eliminating the need for you to rely on expensive consulting implementations.

Amazon Quantum Ledger Database (QLDB) – Released September 10, 2019

- Ledger database that provides a transparent, immutable, and cryptographically verifiable transaction log owned by a central trusted authority
- Tracks each and every application data change and maintains a complete and verifiable history of changes over time

Business Applications

Alexa for Business – Released November 30, 2017

- Enables organizations and employees to use Alexa to get more work done.
- Employees can use Alexa as their intelligent assistant to be more productive in meeting rooms, at their desks, and even with the Alexa devices they already have at home.

Amazon Chime – Released February 13, 2017

- Communications service that lets you meet, chat, and place business calls inside and outside your organization, all using a single application
- You have the flexibility to choose the features that you need for online meetings, video conferencing, and business calling, and pay only when you use them

Amazon WorkMail – Released January 4, 2016

- A secure, managed business email and calendar service with support for existing desktop and mobile email client applications
- gives users the ability to seamlessly access their email, contacts, and calendars using the client application of their choice, including Microsoft Outlook, native iOS and Android email applications, any client application supporting the IMAP protocol, or directly through a web browser.

Amazon WorkDocs- Released July 10, 2014

- A fully managed, secure content creation, storage, and collaboration service.
- You can easily create, edit, and share content, and access it from anywhere on any device
- Lets you integrate with your existing systems, and offers a rich API so that you can develop your own content-rich applications.

Amazon HoneyCode – Released in beta June 2020

- Build mobile and web apps without writing any code.

Customer Engagement

Amazon Connect – Released March 28, 2017

- A self-service, cloud-based contact center service that makes it easy for any business to deliver better customer service at lower cost
- Makes it easy for non-technical users to design contact flows, manage agents, and track performance metrics – no specialized skills required

Amazon Pinpoint – Released December 1, 2016

- Send targeted messages to your customers through multiple engagement channels
- Tracks the ways that your customers respond to the messages you send

Amazon Simple Email Service (SES) – January 25, 2011

- Email sending service designed to help digital marketers and application developers send marketing, notification, and transactional email

Contact Lens for Amazon Connect – Released July 2020

- A set of Machine Learning analytics capabilities that are integrated into Amazon Connect.
- Gives contact center supervisors the ability to understand the sentiment, trends, and compliance risks of customer conversations to replicate successful interactions and identify crucial customer feedback on the company and product.

Compute

Amazon EC2 – Released August 2006

- A web service that provides secure, resizable compute capacity in the cloud. It is designed to make web-scale cloud computing easier for developers.
- Allows you to obtain and configure capacity with minimal friction. It provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment
- Reduces the time required to obtain and boot new server instances to minutes, allowing you to quickly scale capacity, both up and down, as your computing requirements change.

On the ParkMyCloud blog – most blogs in our How to Save on AWS category deal with EC2

Amazon EC2 Auto Scaling – Released May 17, 2009

- Helps you maintain application availability and allows you to automatically add or remove EC2 instances according to conditions you define
- You can use the fleet management features of EC2 Auto Scaling to maintain the health and availability of your fleet. You can also use the dynamic and predictive scaling features of EC2 Auto Scaling to add or remove EC2 instances. Dynamic scaling responds to changing demand and predictive scaling automatically schedules the right number of EC2 instances based on predicted demand.

How to Schedule Auto Scaling Groups

Amazon Lightsail – Released November 30, 2016

- The easiest way to get started with AWS for developers, small businesses, students, and other users who need a simple virtual private server (VPS) solution.
- Provides developers compute, storage, and networking capacity and capabilities to deploy and manage websites and web applications in the cloud.
- Includes everything you need to launch your project quickly – a virtual machine, SSD-based storage, data transfer, DNS management, and a static IP.

AWS Batch – Released January 5, 2017

- Enables developers, scientists, and engineers to easily and efficiently run hundreds of thousands of batch computing jobs on AWS.
- AWS Batch dynamically provisions the optimal quantity and type of compute resources (e.g., CPU or memory optimized instances) based on the volume and specific resource requirements of the batch jobs submitted.
- AWS Batch plans, schedules, and executes your batch computing workloads across the full range of AWS compute services and features, such as Amazon EC2 and Spot Instances.

AWS Elastic Beanstalk – Released January 19, 2011

- An easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS
- Simply upload your code and Elastic Beanstalk automatically handles the deployment, from capacity provisioning, load balancing, auto-scaling to application health monitoring.

AWS Lambda – Released April 15, 2015

- Lets you run code without provisioning or managing servers
- You can run code for virtually any type of application or backend service – all with zero administration.
    - Upload your code and Lambda takes care of everything required to run and scale your code with high availability.

ParkMyCloud + AWS Lambda for Supercharged Automation

AWS Serverless Application Repository – Released February 21, 2018

- A managed repository for serverless applications.
- It enables teams, organizations, and individual developers to store and share reusable applications, and easily assemble and deploy serverless architectures in powerful new ways.
- You can use pre-built applications from the Serverless Application Repository in your serverless architectures, helping you and your teams reduce duplicated work, ensure organizational best practices, and get to market faster.

VMware Cloud on AWS – Released August 28, 2017

- Delivers a highly scalable, secure and innovative service that allows organizations to seamlessly migrate and extend their on-premises VMware vSphere-based environments to the AWS Cloud running on next-generation Amazon Elastic Compute Cloud (Amazon EC2) bare metal infrastructure
- AWS brings the broad, diverse and rich innovations of AWS services natively to the enterprise applications running on VMware's compute, storage and network virtualization platforms.
    - This allows organizations to easily and rapidly add new innovations to their enterprise applications by natively integrating AWS infrastructure and platform capabilities
- You can leverage AWS's breadth of services, including compute, databases, analytics, Internet of Things (IoT), security, mobile, deployment, application services, and more.

AWS Outposts – Released December 3, 2019

- Brings native AWS services, infrastructure, and operating models to virtually any data center, co-location space, or on-premises facility.
- You can use the same APIs, same tools, same hardware, and same functionality across on-premises and the cloud to deliver a truly consistent hybrid experience.
- Outposts can be used to support workloads that need to remain on-premises due to low latency or local data processing needs.

- AWS Outposts come in two variants:
    - 1) VMware Cloud on AWS Outposts allows you to use the same VMware control plane and APIs you use to run your infrastructure
    - 2) AWS native variant of AWS Outposts allows you to use the same exact APIs and control plane you use to run in the AWS cloud, but on-premises.

AWS Wavelength – Released December 3, 2019

- Enables developers to build applications that deliver single-digit millisecond latencies (such as game and live video streaming, machine learning inference at the edge, and augmented and virtual reality) to mobile devices and end-users.
- AWS Wavelength brings AWS compute and storage services to the edge of the 5G network, minimizing the latency to connect to an application from a mobile device

AWS Snow Family – See in "Migration & Transfer" and "Storage"

Containers

AWS App2Container – Released June 2020

- Command-line tool for modernizing .NET and Java applications into containerized applications.
- Allows you to containerize and migrate existing applications and standardize on a single set of tooling for monitoring, operations, and software delivery.

Amazon Elastic Container Registry – Released December 21, 2015

- A fully-managed Docker container registry that makes it easy for developers to store, manage, and deploy Docker container images
- Amazon ECR eliminates the need to operate your own container repositories or worry about scaling the underlying infrastructure.
- Amazon ECR hosts your images in a highly available and scalable architecture, allowing you to reliably deploy containers for your applications.

Amazon ECR & Other Container Services

Amazon Elastic Container Service – Released April 9, 2015

- A highly scalable, high-performance container orchestration service that supports Docker containers and allows you to easily run and scale containerized applications on AWS
- Eliminates the need for you to install and operate your own container orchestration software, manage and scale a cluster of virtual machines, or schedule containers on those virtual machines

Amazon ECS Overview

Amazon Elastic Kubernetes Service – Released June 5, 2018

- Makes it easy to deploy, manage, and scale containerized applications using Kubernetes on AWS.
- Amazon EKS runs the Kubernetes management infrastructure for you across multiple AWS availability zones to eliminate a single point of failure. Applications running on any standard Kubernetes environment are fully compatible and can be easily migrated to Amazon EKS.

Amazon EKS & Other Container Services

AWS Fargate – Released November 29, 2017

- A compute engine for Amazon ECS that allows you to run containers without having to manage servers or clusters
- Removes the need to choose server types, decide when to scale your clusters, or optimize cluster packing.
- Removes the need for you to interact with or think about servers or clusters.
    - Lets you focus on designing and building your applications instead of managing the infrastructure that runs them
- AWS Fargate eliminates the need to manage a cluster of Amazon EC2 instances.
    - You no longer have to pick the instance types, manage cluster scheduling, or optimize cluster utilization.

End User Computing

Amazon WorkSpaces – Released March 26, 2014

- Provision either Windows or Linux desktops in just a few minutes and quickly scale to provide thousands of desktops to workers across the globe
- Your users get a fast, responsive desktop of their choice that they can access anywhere, anytime, from any supported device.

Amazon AppStream 2.0 – Released December 1, 2016

- Fully managed application streaming service.
    - You centrally manage your desktop applications on AppStream 2.0 and securely deliver them to any computer.
- You can easily scale to any number of users across the globe without acquiring, provisioning, and operating hardware or infrastructure

Amazon WorkLink – Released January 23, 2019

- Lets you provide your employees with secure, easy access to your internal corporate websites and web apps using their mobile phones.
- Employees can access internal web content as easily as they access any public website, without the hassle of connecting to their corporate network.

Game Tech

Amazon GameLift – Released February 9, 2016

- Managed service for deploying, operating, and scaling dedicated game servers for session-based multiplayer games.
- Lets you scale high-performance game servers up and down to meet player demand.
- Deploys your first game server in the cloud in just minutes, and saves up to thousands of engineering hours in upfront software development and lowering technical risks.

Amazon Lumberyard – Released February 9, 2016

- Free, cross-platform AAA game engine deeply integrated with AWS and Twitch – with full source code provided.
- Help developers build games with beautiful worlds, realistic characters, and stunning effects

Database

Amazon Aurora- Released July 27, 2015

- A MySQL and PostgreSQL-compatible relational database built for the cloud, that combines the performance and availability of traditional enterprise databases with the simplicity and cost-effectiveness of open source databases
- Provides the security, availability, and reliability of commercial databases at 1/10th the cost.
- Fully managed by Amazon Relational Database Service (RDS), which automates time-consuming administration tasks like hardware provisioning, database setup, patching, and backups.

Amazon RDS – Released October 22, 2009

- Makes it easy to set up, operate, and scale a relational database in the cloud.
- Provides cost-efficient and resizable capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching and backups.

Start & Stop RDS Instances on a Schedule for cost savings

Amazon DynamoDB – Released January 18, 2012

- A key-value and document database that delivers single-digit millisecond performance at any scale.
- It's a fully managed, multiregion, multimaster database with built-in security, backup and restore, and in-memory caching for internet-scale applications.
- Supports some of the world's largest scale applications by providing consistent, single-digit millisecond response times at any scale.

Amazon ElastiCache – Released August 22, 2011

- Seamlessly deploy, run, and scale popular open source compatible in-memory data stores.
- Build data-intensive apps or improve the performance of your existing apps by retrieving data from high throughput and low latency in-memory data stores

Amazon Redshift – See in "Analytics" Category Above
Amazon Neptune – Released May 30, 2018

- A fast, reliable, fully managed graph database service that makes it easy to build and run applications that work with highly connected datasets.
- A purpose-built, high-performance graph database engine optimized for storing billions of relationships and querying the graph with milliseconds latency.
- Highly available, with read replicas, point-in-time recovery, continuous backup to Amazon S3, and replication across Availability Zones.
- Allows you to easily build queries that efficiently navigate highly connected datasets.

AWS Neptune Overview

AWS Database Migration Service – March 15, 2016

- Helps you migrate databases to AWS quickly and securely.
    - The source database remains fully operational during the migration, minimizing downtime to applications that rely on the database.
- Can migrate your data to and from most widely used commercial and open-source databases.
- Supports homogenous migrations, as well as heterogeneous migrations between different database platforms.

Amazon Timestream – Preview announced on Nov 28, 2018

- A fast, scalable, fully managed time series database service for IoT and operational applications that makes it easy to store and analyze trillions of events per day at 1/10th the cost of relational databases
- A purpose-built time series database that efficiently stores and processes this data by time intervals.
- You can easily store and analyze log data for DevOps, sensor data for IoT applications, and industrial telemetry data for equipment maintenance
- Timestream's adaptive query processing engine understands its location and format, making your data simpler and faster to analyze.

- Automates rollups, retention, tiering, and compression of data, so you can manage your data at the lowest possible cost.

Amazon RDS on VMware – October 16, 2019

- Lets you deploy managed databases in on-premises VMware environments using the Amazon RDS technology enjoyed by hundreds of thousands of AWS customers.
- Provides cost-efficient and resizable capacity while automating time-consuming administration tasks including hardware provisioning, database setup, patching, and backups.
- Allows you to utilize the same simple interface for managing databases in on-premises VMware environments as you would use in AWS. You can easily replicate RDS on VMware databases to RDS instances in AWS, enabling low-cost hybrid deployments for disaster recovery, read replica bursting, and optional long-term backup retention in Amazon Simple Storage Service (S3).

Amazon Quantum Ledger Database (QLDB) – See in "Blockchain" Category Above

Amazon DocumentDB (with MongoDB compatibility) – Released January 9, 2019

- A fast, scalable, highly available, and fully managed document database service that supports MongoDB workloads.
- Customers use MongoDB as a document database to store, retrieve, and manage semi-structured data.
    - However, it is hard to build performant, highly available applications that can quickly scale to multiple terabytes and hundreds of thousands of reads- and writes-per-second because of the complexity that comes with setting up and managing MongoDB clusters at scale.
- Amazon DocumentDB is designed from the ground-up to give you the performance, scalability, and availability you need when operating mission-critical MongoDB workloads at scale

Amazon Keyspaces (for Apache Cassandra) – Released April 2020

- A scalable, highly available, and managed Apache Cassandra–compatible database service.

- You can run your Cassandra workloads in AWS using the same Cassandra application code and tools that you use today.

Developer Tools

AWS Cloud Development Kit – Generally Available July 11, 2019

- An open-source software development framework to model and provision your cloud application resources.
- Accelerates your onboarding to AWS.
- You can design your own reusable components to fit your organization's security, compliance and governance requirements.
- Enables you to build your cloud application without leaving your IDE.
- Provides you with high-level components that preconfigure cloud resources with proven defaults, so you can build cloud applications without needing to be an expert.

AWS CodeStar – Released April 19, 2017

- Enables you to quickly develop, build, and deploy applications on AWS.
- Provides a unified user interface, enabling you to easily manage your software development activities in one place
- You can set up your entire continuous delivery toolchain in minutes, allowing you to start releasing code faster.
- Makes it easy for your whole team to work together securely, allowing you to easily manage access and add owners, contributors, and viewers to your projects
- You can easily track progress across your entire software development process, from your backlog of work items to teams' recent code deployments.

AWS CodeCommit – Released July 9, 2015

- A fully-managed source control service that hosts secure Git-based repositories.
    - It makes it easy for teams to collaborate on code in a secure and highly scalable ecosystem
- Eliminates the need to operate your own source control system or worry about scaling its infrastructure.

- Can use to securely store anything from source code to binaries, and it works seamlessly with your existing Git tools.

AWS CodeBuild – Released December 1, 2016

- A fully managed continuous integration service that compiles source code, runs tests, and produces software packages that are ready to deploy.
- Scales continuously and processes multiple builds concurrently, so your builds are not left waiting in a queue.
- Eliminates the need to set up, patch, update, and manage your own build servers and software.

AWS CodeDeploy – Released November 12, 2014

- A fully managed deployment service that automates software deployments to a variety of compute services such as Amazon EC2, AWS Fargate, AWS Lambda, and your on-premises servers, eliminating the need for error-prone manual operations.
- Makes it easier for you to rapidly release new features, helps you avoid downtime during application deployment, and handles the complexity of updating your applications.

AWS CodePipeline – Released July 9, 2015

- A fully managed continuous delivery service that helps you automate your release pipelines for fast and reliable application and infrastructure updates.
- Automates the build, test, and deploy phases of your release process every time there is a code change, based on the release model you define.
    - This enables you to rapidly and reliably deliver features and updates.

AWS Cloud9 – Released November 30, 2017

- A cloud-based integrated development environment (IDE) that lets you write, run, and debug your code with just a browser.
    - Includes a code editor, debugger, and terminal.
- Comes prepackaged with essential tools for popular programming languages, so you don’t need to install files or configure your development machine to start new projects.
- Provides a seamless experience for developing serverless applications enabling you to easily define resources, debug,

and switch between local and remote execution of serverless applications.

AWS X-Ray – Released April 19, 2017

- Helps developers analyze and debug production, distributed applications, such as those built using a microservices architecture.
- You can understand how your application and its underlying services are performing to identify and troubleshoot the root cause of performance issues and errors.
- Provides an end-to-end view of requests as they travel through your application, and shows a map of your application's underlying components.
- You can use to analyze both applications in development and in production, from simple three-tier applications to complex microservices applications consisting of thousands of services.

AWS Command Line Interface – Released September 3, 2013

- A unified tool to manage your AWS services.
- With just one tool to download and configure, you can control multiple AWS services from the command line and automate them through scripts.

Amazon Corretto – Released January 31st, 2019

- A no-cost, multiplatform, production-ready distribution of the Open Java Development Kit (OpenJDK).
- Amazon runs Corretto internally on thousands of production services and Corretto is certified as compatible with the Java SE standard. With Corretto, you can develop and run Java applications on popular operating systems, including Linux, Windows, and macOS.

AWS Tools and SDKs

- AWS includes Tools and SDKs that allows you to access and manage AWS services with your preferred development language or platform.

AWS Device Farm – See in "Mobile" Category Above

AWS CodeArtifact – Released June 2020

- Secure, scalable, and cost-effective artifact management for software development

- Can be configured to automatically fetch software packages and dependencies from public artifact repositories so developers have access to the latest versions.
- Works with package managers and build tools making it easy to integrate into existing development workflows.

Amazon CodeGuru – Released June 2020

- A machine learning service for development teams used for automated code reviews and to identify the most expensive lines of code in their applications.
- It also receives intelligent recommendations on how to fix or improve their code.

Internet of Things

AWS IoT Core – Released December 18, 2015

- A managed cloud service that lets connected devices easily and securely interact with cloud applications and other devices.
- Can support billions of devices and trillions of messages, and can process and route those messages to AWS endpoints and to other devices reliably and securely.
- Allows you to easily connect devices to the cloud and to other devices.

Amazon FreeRTOS – Released November 29, 2017

- An operating system for microcontrollers that makes small, low-power edge devices easy to program, deploy, secure, connect, and manage.
- You can take advantage of the large ecosystem of existing tools developed for the FreeRTOS kernel.

AWS Greengrass – Released June 7, 2017

- Extends AWS to edge devices so they can act locally on the data they generate, while still using the cloud for management, analytics, and durable storage.
- You can use familiar languages and programming models to create and test your device software in the cloud, and then deploy it to your devices.
- Can be programmed to filter device data and only transmit necessary information back to the cloud.

    - Can also connect to third-party applications, on-premises software, and AWS services out-of-the-box.

AWS IoT 1-Click – Released May 16, 2018

- A service that enables simple devices to trigger AWS Lambda functions that can execute an action.
- AWS IoT 1-Click supported devices enable you to easily perform actions such as notifying technical support, tracking assets, and replenishing goods or services
- AWS IoT 1-Click supported devices are ready for use right out of the box and eliminate the need for writing your own firmware or configuring them for secure connectivity. AWS IoT 1-Click supported devices can be easily managed.
- You can easily create device groups and associate them with a Lambda function that executes your desired action when triggered. You can also track device health and activity with the pre-built reports.

AWS IoT Analytics – Released April 24, 2018

- A fully-managed service that makes it easy to run and operationalize sophisticated analytics on massive volumes of IoT data without having to worry about the cost and complexity typically required to build an IoT analytics platform.
- It is the easiest way to run analytics on IoT data and get insights to make better and more accurate decisions for IoT applications and machine learning use cases.
- Automates each of the difficult steps that are required to analyze data from IoT devices.
- AWS IoT Analytics filters, transforms, and enriches IoT data before storing it in a time-series data store for analysis.
    - You can setup the service to collect only the data you need from your devices, apply mathematical transforms to process the data, and enrich the data with device-specific metadata such as device type and location before storing the processed data.
- Makes it easy to get started with machine learning by including pre-built models for common IoT use cases.

- Automates the execution of your custom analyses created in Jupyter Notebook or your own tools (such as Matlab, Octave, etc.) to be executed on your schedule.
- AWS IoT Analytics is a fully managed service that operationalizes analyses and scales automatically to support up to petabytes of IoT data.
    - With AWS IoT Analytics, you can analyze data from millions of devices and build fast, responsive IoT applications without managing hardware or infrastructure.

AWS IoT Button – Released May 2016

- A programmable button based on the Amazon Dash Button hardware.
    - This simple Wi-Fi device is easy to configure and designed for developers to get started with AWS IoT Core, AWS Lambda, Amazon DynamoDB, Amazon SNS, and many other Amazon Web Services without writing device-specific code.
- You can code the button's logic in the cloud to configure button clicks to count or track items, call or alert someone, start or stop something, order services, or even provide feedback.

Why We Love the AWS IoT Button

AWS IoT Device Defender – Released August 2, 2018

- A fully managed service that helps you secure your fleet of IoT devices.
- Continuously audits your IoT configurations to make sure that they aren't deviating from security best practices.
- Makes it easy to maintain and enforce IoT configurations, such as ensuring device identity, authenticating and authorizing devices, and encrypting device data.
- Continuously audits the IoT configurations on your devices against a set of predefined security best practices.
- Sends an alert if there are any gaps in your IoT configuration that might create a security risk, such as identity certificates being shared across multiple devices or a device with a revoked identity certificate trying to connect to AWS IoT Core.

- Lets you continuously monitor security metrics from devices and AWS IoT Core for deviations from what you have defined as appropriate behavior for each device.
- If something doesn't look right, it sends out an alert so you can take action to remediate the issue

AWS IoT Device Management – Released November 29, 2017

- Makes it easy to securely onboard, organize, monitor, and remotely manage IoT devices at scale.
- You can register your connected devices individually or in bulk, and easily manage permissions so that devices remain secure.
- You can organize your devices, monitor and troubleshoot device functionality, query the state of any IoT device in your fleet, and send firmware updates over-the-air (OTA).
- You can manage devices from constrained microcontrollers to connected cars all with the same service.
- Allows you to scale your fleets and reduce the cost and effort of managing large and diverse IoT device deployments.

AWS IoT Events – May 30, 2019

- A fully managed IoT service that makes it easy to detect and respond to events from IoT sensors and applications
- It's simple to detect events across thousands of IoT sensors sending different telemetry data.
- Continuously monitors data from multiple IoT sensors and applications, and it integrates with other services, to enable early detection and unique insights into events.
- Automatically triggers alerts and actions in response to events based on the logic you define.
    - This helps resolve issues quickly, reduce maintenance costs, and increase operational efficiency.

AWS IoT SiteWise – Released July 2020

- A managed service that makes it easy to collect and organize data from industrial equipment at scale.
    - You can easily monitor equipment across your industrial facilities to identify waste.

- Provides software running on a gateway that resides in your facilities and automates the process of collecting and organizing industrial equipment data.
    - This gateway securely connects to your on-premises data servers, collects data, and sends the data to the AWS Cloud.
- Monitor operations across facilities, quickly compute common industrial performance metrics, and build applications to analyze industrial equipment data, prevent costly equipment issues, and reduce production inefficiencies.

AWS Partner Device Catalog – Released November 2018

- A hardware validation and benefits program for all AWS Partner Network (APN) Partners
    - Through this program, APN Partners can submit their hardware for technical validation for Amazon FreeRTOS, AWS IoT Greengrass, AWS IoT Core, and Amazon Kinesis Video Streams.

AWS IoT Things Graph – May 30, 2019

- A service that makes it easy to visually connect different devices and web services to build IoT applications.
- Provides a visual drag-and-drop interface for connecting and coordinating devices and web services, so you can build IoT applications quickly.
- You can get started with AWS IoT Things Graph using these pre-built models for popular device types, such as switches and programmable logic controllers (PLCs), or create your own custom model using a GraphQL-based schema modeling language, and deploy your IoT application to AWS IoT Greengrass-enabled devices such as cameras, cable set-top boxes, or robotic arms in just a few clicks

Machine Learning

Amazon SageMaker – Released November 29, 2017

- Provides every developer and data scientist with the ability to build, train, and deploy machine learning models quickly.

- A fully-managed service that covers the entire machine learning workflow to label and prepare your data, choose an algorithm, train the model, tune and optimize it for deployment, make predictions, and take action.

Amazon Comprehend – Released November 29, 2017

- A natural language processing (NLP) service that uses machine learning to find insights and relationships in text. No machine learning experience required.
- Uses machine learning to help you uncover the insights and relationships in your unstructured data.
    - The service identifies the language of the text; extracts key phrases, places, people, brands, or events; understands how positive or negative the text is; analyzes text using tokenization and parts of speech; and automatically organizes a collection of text files by topic.
    - You can also use AutoML capabilities in Amazon Comprehend to build a custom set of entities or text classification models that are tailored uniquely to your organization's needs.

Amazon Lex – Released April 19, 2017

- A service for building conversational interfaces into any application using voice and text.
- Provides the advanced deep learning functionalities of automatic speech recognition (ASR) for converting speech to text, and natural language understanding (NLU) to recognize the intent of the text, to enable you to build applications with highly engaging user experiences and lifelike conversational interactions
- Democratizes these deep learning technologies by putting the power of Amazon Alexa within reach of all developers.
    - Harnessing these technologies, Amazon Lex enables you to define entirely new categories of products made possible through conversational interfaces.
- As a fully managed service, Amazon Lex scales automatically, so you don't need to worry about managing infrastructure

Amazon Polly – Released November 30, 2016

- A service that turns text into lifelike speech, allowing you to create applications that talk, and build entirely new categories of speech-enabled products.
- A Text-to-Speech service that uses advanced deep learning technologies to synthesize speech that sounds like a human voice.

Amazon Rekognition – Released November 30, 2016

- Makes it easy to add image and video analysis to your applications.
    - You just provide an image or video to the Rekognition API, and the service can identify the objects, people, text, scenes, and activities, as well as detect any inappropriate content
- Provides highly accurate facial analysis and facial recognition on images and video that you provide.
    - You can detect, analyze, and compare faces for a wide variety of user verification, people counting, and public safety use cases.
- A simple and easy to use API that can quickly analyze any image or video file stored in Amazon S3.

Amazon Translate – Released April 4, 2018

- A neural machine translation service that delivers fast, high-quality, and affordable language translation.
- Allows you to localize content – such as websites and applications – for international users, and to easily translate large volumes of text efficiently.

Amazon Transcribe – Released April 4, 2018

- An automatic speech recognition (ASR) service that makes it easy for developers to add speech-to-text capability to their applications
- You can analyze audio files stored in Amazon S3 and have the service return a text file of the transcribed speech.
    - You can also send a live audio stream to Amazon Transcribe and receive a stream of transcripts in real time.

- Can be used for lots of common applications, including the transcription of customer service calls and generating subtitles on audio and video content.
    - The service can transcribe audio files stored in common formats, like WAV and MP3, with time stamps for every word so that you can easily locate the audio in the original source by searching for the text.

AWS DeepLens – Released June 13, 2018

- Helps put deep learning in the hands of developers, literally, with a fully programmable video camera, tutorials, code, and pre-trained models designed to expand deep learning skills.
- The world's first deep-learning enabled video camera for developers of all skill levels to grow their machine learning skills through hands-on computer vision tutorials, example code, and pre-built models.

AWS Deep Learning AMIs – Released in 2017

- Provides machine learning practitioners and researchers with the infrastructure and tools to accelerate deep learning in the cloud, at any scale.

Apache MXNet on AWS – Released in 2017

- A fast and scalable training and inference framework with an easy-to-use, concise API for machine learning.
- Includes the Gluon interface that allows developers of all skill levels to get started with deep learning on the cloud, on edge devices, and on mobile apps.

TensorFlow on AWS – Released in 2017

- Enables developers to quickly and easily get started with deep learning in the cloud.
    - The framework has broad support in the industry and has become a popular choice for deep learning research and application development, particularly in areas such as computer vision, natural language understanding and speech translation.
- Comes with a full suite of visualization tools that make it easy to understand, debug, and optimize applications.

        - With support for a variety of styles – from images and audio to histograms and graphs – you can train massive deep neural networks quickly and easily.

Amazon Personalize – June 10, 2019

- A machine learning service that makes it easy for developers to create individualized recommendations for customers using their applications.
- Allows developers with no prior machine learning experience to easily build sophisticated personalization capabilities into their applications, using machine learning technology perfected from years of use on Amazon.com.
- Amazon Personalize will process and examine the data, identify what is meaningful, select the right algorithms, and train and optimize a personalization model that is customized for your data.
    - You provide an activity stream from your application – page views, signups, purchases, and so forth – as well as an inventory of the items you want to recommend, such as articles, products, videos, or music.

Amazon Forecast – August 22, 2019

- A fully managed service that uses machine learning to deliver highly accurate forecasts.
- Uses machine learning to combine time series data with additional variables to build forecasts.
- Requires no machine learning experience to get started.
    - You only need to provide historical data, plus any additional data that you believe may impact your forecasts.

Amazon Inferentia – Coming late 2019

- A machine learning inference chip designed to deliver high performance at low cost.
- Provides high throughput, low latency inference performance at an extremely low cost.

Amazon Textract – May 29, 2019

- A service that automatically extracts text and data from scanned documents.

- Goes beyond simple optical character recognition (OCR) to also identify the contents of fields in forms and information stored in tables.
- Using machine learning to instantly “read” virtually any type of document to accurately extract text and data without the need for any manual effort or custom code.
- You can quickly automate document workflows, enabling you to process millions of document pages in hours.

Amazon Elastic Inference – Released November 28, 2018

- Allows you to attach low-cost GPU-powered acceleration to Amazon EC2 and Amazon SageMaker instances to reduce the cost of running deep learning inference by up to 75%.
- Allowing you to attach just the right amount of GPU-powered inference acceleration to any EC2 or SageMaker instance type with no code changes.
- You can now choose the instance type that is best suited to the overall CPU and memory needs of your application, and then separately configure the amount of inference acceleration that you need to use resources efficiently and to reduce the cost of running inference.

Amazon SageMaker Ground Truth – Released November 28, 2018

- Helps you build highly accurate training datasets for machine learning quickly.
- Offers easy access to public and private human labelers and provides them with built-in workflows and interfaces for common labeling tasks.
- Can lower your labeling costs by up to 70% using automatic labeling, which works by training Ground Truth from data labeled by humans so that the service learns to label data independently.
- Significantly reduces the time and effort required to create datasets for training to reduce costs.

AWS DeepRacer – April 29, 2019

- The first autonomous scale car specifically developed to help developers get hands-on with reinforcement learning.

- Gives developers a simple way to learn RL, experiment with new RL algorithms and simulation-to-real domain transfer methods, and experience RL in the real world.

AWS Deep Learning Containers – Released March 27, 2019

- Docker images pre-installed with deep learning frameworks to make it easy to deploy custom machine learning (ML) environments quickly by letting you skip the complicated process of building and optimizing your environments from scratch
- Docker containers are a popular way to deploy custom ML environments that run consistently in multiple environments
- AWS DL Containers provide Docker images that are pre-installed and tested with the latest versions of popular deep learning frameworks and the libraries they require.
- Come optimized to distribute ML workloads efficiently on clusters of instances on AWS, so that you get high performance and scalability right away.

Amazon Augmented AI – Released December 3, 2019

- Makes it easy to build workflows that are required for human review of Machine Learning predictions.
- Brings human review to all developers, removing the undifferentiated heavy lifting associated with building human review systems or managing large numbers of human reviewers.

Amazon CodeGuru – Released June 2020

- A machine learning service for development teams used for automated code reviews and to identify the most expensive lines of code in their applications.
- It also receives intelligent recommendations on how to fix or improve their code.

Amazon Fraud Detector – Released July 2020

- A fully managed service that makes it easy to identify potentially fraudulent online activities – ex. online payment fraud and the creation of fake accounts.
- Uses machine learning and years of fraud detection expertise from AWS and Amazon.com to automatically identify

potentially fraudulent activity so you can catch more fraud faster.

Amazon Kendra – Released May 2020

- An enterprise search service powered by machine learning and is highly accurate and easy to use.
- Provides a more intuitive way to search, using natural language, and returns more accurate answers so your end users can more easily find the information they need within the vast amount of content spread across your company.

AWS DeepComposer – Will be available in early Q1 2020

- The world's first machine learning-enabled keyboard for developers.
- With the AWS DeepComposer keyboard, you can create a melody that will transform into a completely original song in seconds, all powered by AI.

PyTorch on AWS

- Flexible open-source machine learning framework.
- Allows developers to iterate quickly on their models in the prototyping stage without giving up performance in the production stage.
- Using TorchScript in PyTorch, developers can seamlessly transition between eager mode and graph mode for efficient execution in production environments.

Management & Governance

AWS Chatbot – In beta as of July 24, 2019

- An interactive agent that makes it easy to monitor and interact with your AWS resources from your team chat room.
- You can receive alerts and execute commands to return diagnostic information.
- Can be set up for your Amazon Chime or Slack chat rooms.

Amazon CloudWatch – Released May 2009

- A monitoring and management service built for developers, system operators, site reliability engineers (SRE), and IT managers.

- Provides you with data and actionable insights to monitor your applications, understand and respond to system-wide performance changes, optimize resource utilization, and get a unified view of operational health
- Collects monitoring and operational data in the form of logs, metrics, and events, providing you with a unified view of AWS resources, applications and services that run on AWS, and on-premises servers
- Set high resolution alarms, visualize logs and metrics side by side, take automated actions, troubleshoot issues, and discover insights to optimize your applications, and ensure they are running smoothly.

CloudWatch Automatic Dashboards

AWS Auto Scaling – Released January 16, 2018

- Monitors your applications and automatically adjusts capacity to maintain steady, predictable performance at the lowest possible cost
- It's easy to setup application scaling for multiple resources across multiple services in minutes.
- The service provides a simple, powerful user interface that lets you build scaling plans for resources.
- Makes scaling simple with recommendations that allow you to optimize performance, costs, or balance between them
- Your applications always have the right resources at the right time.

How to Save Money with AWS Auto Scaling Groups

AWS CloudFormation – Released February 25, 2011

- Provides a common language for you to describe and provision all the infrastructure resources in your cloud environment.
- Allows you to use a simple text file to model and provision, in an automated and secure manner, all the resources needed for your applications across all regions and accounts.
    - This file serves as the single source of truth for your cloud environment.

Terraform vs. CloudFormation

AWS CloudTrail – Released November 13, 2013

- A service that enables governance, compliance, operational auditing, and risk auditing of your AWS account.
- You can log, continuously monitor, and retain account activity related to actions across your AWS infrastructure
- Provides event history of your AWS account activity, including actions taken through the AWS Management Console, AWS SDKs, command line tools, and other AWS services.
    - This event history simplifies security analysis, resource change tracking, and troubleshooting.

AWS Config – Released November 12, 2014

- A service that enables you to assess, audit, and evaluate the configurations of your AWS resources.
- Continuously monitors and records your AWS resource configurations and allows you to automate the evaluation of recorded configurations against desired configurations.
- you can review changes in configurations and relationships between AWS resources, dive into detailed resource configuration histories, and determine your overall compliance against the configurations specified in your internal guidelines.
    - This enables you to simplify compliance auditing, security analysis, change management, and operational troubleshooting.

AWS OpsWorks – Released February 18, 2013

- A configuration management service that provides managed instances of Chef and Puppet.
    - Chef and Puppet are automation platforms that allow you to use code to automate the configurations of your servers.
- OpsWorks lets you use Chef and Puppet to automate how servers are configured, deployed, and managed across your Amazon EC2 instances or on-premises compute environments.
    - OpsWorks has three offerings, AWS Opsworks for Chef Automate, AWS OpsWorks for Puppet Enterprise, and AWS OpsWorks Stacks.

AWS Service Catalog – Released July 9, 2015

- Allows organizations to create and manage catalogs of IT services that are approved for use on AWS.
    - These IT services can include everything from virtual machine images, servers, software, and databases to complete multi-tier application architectures.
- Allows you to centrally manage commonly deployed IT services, and helps you achieve consistent governance and meet your compliance requirements, while enabling users to quickly deploy only the approved IT services they need

AWS Systems Manager – Released November 29, 2017

- Gives you visibility and control of your infrastructure on AWS.
- Provides a unified user interface so you can view operational data from multiple AWS services and allows you to automate operational tasks across your AWS resources
- You can group resources,by application, view operational data for monitoring and troubleshooting, and take action on your groups of resources.
- Simplifies resource and application management, shortens the time to detect and resolve operational problems, and makes it easy to operate and manage your infrastructure securely at scale.

AWS Trusted Advisor – Released July 31, 2014

- An online tool that provides you real time guidance to help you provision your resources following AWS best practices.
- Take advantage of the recommendations provided by Trusted Advisor on a regular basis to help keep your solutions provisioned optimally.

AWS Personal Health Dashboard – Released December 1, 2016

- Provides alerts and remediation guidance when AWS is experiencing events that may impact you.
- Gives you a personalized view into the performance and availability of the AWS services underlying your AWS resources.
- The dashboard displays relevant and timely information to help you manage events in progress, and provides proactive notification to help you plan for scheduled activities.

- Alerts are triggered by changes in the health of AWS resources, giving you event visibility, and guidance to help quickly diagnose and resolve issues.

AWS Control Tower – Released November 28, 2018

- Automates the set-up of their landing zone and configures AWS management and security services based on established best practices in a secure, compliant, multi-account environment

AWS License Manager – Released November 28, 2018

- Makes it easier to manage licenses in AWS and on-premises servers from software vendors.
- Lets administrators create customized licensing rules that emulate the terms of their licensing agreements, and then enforces these rules when an instance of EC2 gets launched
- The rules enable you to limit a licensing breach by physically stopping the instance from launching or by notifying administrators about the infringement.
- Administrators gain control and visibility of all their licenses and reduce the risk of non-compliance, misreporting, and additional costs due to licensing overages.
- Integrates with AWS services to simplify the management of licenses across multiple AWS accounts, IT catalogs, and on-premises, through a single AWS account.

AWS Well-Architected Tool – Released November 29, 2018

- Helps you review the state of your workloads and compares them to the latest AWS architectural best practices.
- The tool is based on the AWS Well-Architected Framework, developed to help cloud architects build secure, high-performing, resilient, and efficient application infrastructure.
- Provides a consistent approach for customers and partners to evaluate architectures, has been used in tens of thousands of workload reviews conducted by the AWS solutions architecture team, and provides guidance to help implement designs that scale with application needs over time.
- Provides a plan on how to architect for the cloud using established best practices.

AWS Command Line Interface – See in "Developer Tools" section above

AWS Console Mobile Application – Released November 15, 2018

- Lets customers view and manage a select set of resources to support incident response while on-the-go.
- Allows AWS customers to monitor resources through a dedicated dashboard and view configuration details, metrics, and alarms for select AWS services.
- The Dashboard provides permitted users with a single view a resource's status,
- Customers can view ongoing issues and follow through to the relevant CloudWatch alarm screen for a detailed view with graphs and configuration options. In addition, customers can check on the status of specific AWS services, view detailed resource screens, and perform select actions.

AWS Management Console – Released January 8, 2009

- Facilitates cloud management for all aspects of your AWS account, including monitoring your monthly spending by service, managing security credentials, or even setting up new IAM Users.
- Access and manage Amazon Web Services through a simple and intuitive web-based user interface.

AWS Managed Services – Released December 12, 2016

- Operates AWS on your behalf, providing a secure and compliant AWS Landing Zone, a proven enterprise operating model, on-going cost optimization, and day-to-day infrastructure management.
- Helps to reduce your operational overhead and risk.
- Automates common activities, such as change requests, monitoring, patch management, security, and backup services, and provides full-lifecycle services to provision, run, and support your infrastructure.

AWS Organizations – Released February 27, 2017

- Helps you centrally govern your environment as you grow and scale your workloads on AWS.

- You can automate account creation, create groups of accounts to reflect your business needs, and apply policies for these groups for governance.

AWS Compute Optimizer – Released December 3, 2019

- A machine learning-based recommendation service that makes it easy for you to ensure that you are using optimal AWS Compute resources to reduce costs and improve performance for workloads.
- Delivers intuitive and easily actionable EC2 instance recommendations so you can identify optimal EC2 instance types for your workloads without requiring specialized knowledge or investing substantial time and money.

Media Services

AWS Elemental Appliances & Software – Announced May 2019

- Solutions that bring advanced video processing and delivery technologies into your data center, co-location space, or on-premises facility.
- Supports video workloads that need to remain on-prem to accommodate physical camera and router interfaces, managed network delivery, or network bandwidth constraints.
- Comes in two variants: ready-to-deploy appliances, or AWS-licensed software that you install on your own hardware.

Amazon Elastic Transcoder – Released January 28, 2013

- Media transcoding in the cloud.
- A highly scalable, easy to use and cost effective way for developers and businesses to convert (or “transcode”) video and audio files from their source format into versions that will playback on devices like smartphones, tablets and PCs.

Amazon Kinesis Video Streams – Released November 29, 2017

- Makes it easy to securely stream video from connected devices to AWS for analytics, machine learning (ML), playback, and other processing.
- Automatically provisions and elastically scales all the infrastructure needed to ingest streaming video data from millions of devices

- Durably stores, encrypts, and indexes video data in your streams, and allows you to access your data through easy-to-use APIs.
- Enables you to playback video for live and on-demand viewing, and quickly build applications that take advantage of computer vision and video analytics through integration with Amazon Recognition Video, and libraries for ML frameworks such as Apache MxNet, TensorFlow, and OpenCV.
- Provides SDKs that make it easy for devices to securely stream video to AWS for playback, storage, analytics, machine learning, and other processing.
- Can ingest data from edge devices, smartphones, and security cameras, and other data sources such as RADARs, LIDARs, drones, satellites, dashcams, and depth-sensors.

AWS Elemental MediaConvert – Released November 26, 2017

- A file-based video transcoding service with broadcast-grade features. It allows you to easily create video-on-demand (VOD) content for broadcast and multiscreen delivery at scale.
- The service combines advanced video and audio capabilities with a simple web services interface and pay-as-you-go pricing.

AWS Elemental MediaLive – Released November 26, 2017

- A broadcast-grade live video processing service. It lets you create high-quality video streams for delivery to broadcast televisions and internet-connected multiscreen devices, like connected TVs, tablets, smart phones, and set-top boxes
- The service works by encoding your live video streams in real-time, taking a larger-sized live video source and compressing it into smaller versions for distribution to your viewers.
- You can easily set up streams for both live events and 24×7 channels with advanced broadcasting features, high availability, and pay-as-you-go pricing.
- Lets you focus on creating compelling live video experiences for your viewers without the complexity of building and operating broadcast-grade video processing infrastructure.

AWS Elemental MediaPackage – Released November 26, 2017

- Prepares and protects your video for delivery over the Internet. From a single video input, AWS Elemental MediaPackage creates video streams formatted to play on connected TVs, mobile phones, computers, tablets, and game consoles
- Can also protect your content using Digital Rights Management (DRM).
- Scales automatically in response to load, so your viewers will always get a great experience without you having to accurately predict in advance the capacity you'll need.

AWS Elemental MediaStore – Released November 26, 2017

- An AWS storage service optimized for media. It gives you the performance, consistency, and low latency required to deliver live streaming video content.
- Acts as the origin store in your video workflow. Its high performance capabilities meet the needs of the most demanding media delivery workloads, combined with long-term, cost-effective storage.

AWS Elemental MediaTailor – Released November 26, 2017

- Lets video providers insert individually targeted advertising into their video streams without sacrificing broadcast-level quality-of-service.
- Viewers of your live or on-demand video each receive a stream that combines your content with ads personalized to them.
- With AWS Elemental MediaTailor your entire stream – video and ads – is delivered with broadcast-grade video quality to improve the experience for your viewers.
- Delivers automated reporting based on both client and server-side ad delivery metrics, making it easy to accurately measure ad impressions and viewer behavior.
- You can easily monetize unexpected high-demand viewing events with no up-front costs.
- Also improves ad delivery rates, helping you make more money from every video, and it works with a wider variety of content delivery networks, ad decision servers, and client devices.

AWS Elemental MediaConnect – Released November 27, 2018

- A high-quality transport service for live video.
- Enables you to build mission-critical live video workflows in a fraction of the time and cost of satellite or fiber services.
- You can use to ingest live video from a remote event site, share video with a partner, or replicate a video stream for processing.
- Combines reliable video transport, highly secure stream sharing, and real-time network traffic and video monitoring that allow you to focus on your content, not your transport infrastructure.

Amazon Interactive Video Service – Released July 2020

- Managed live streaming solution that is quick and easy to set up – ideal for creating interactive video experiences.
- These streams are designed to provide low-latency live video.

Migration & Transfer

CloudEndure Migration – Released July 11, 2019

- Simplifies, expedites, and reduces the cost of cloud migration by offering an automated lift-and-shift solution.
- Continually replicates your source machines into a staging area in your AWS account without causing downtime or impacting performance.

AWS Application Discovery Service – Released December 19, 2016

- Helps enterprise customers plan migration projects by gathering information about their on-premises data centers.
- Collects and presents configuration, usage, and behavior data from your servers to help you better understand your workloads.
- The collected data is retained in encrypted format in an AWS Application Discovery Service data store.

AWS Database Migration Service – See in "Database" Section Above

AWS Migration Hub – Released August 14, 2017

- Provides a single location to track the progress of application migrations across multiple AWS and partner solutions.

- Allows you to choose the AWS and partner migration tools that best fit your needs, while providing visibility into the status of migrations across your portfolio of applications.
- Provides key metrics and progress for individual applications, regardless of which tools are being used to migrate them
- You can view the migration progress of all the resources in the application.
    - This allows you to quickly get progress updates across all of your migrations, easily identify and troubleshoot any issues, and reduce the overall time and effort spent on your migration projects.
- Provides a single place to monitor migrations in any AWS region where your migration tools are available.

AWS Server Migration Service – Released October 24, 2016

- an agentless service which makes it easier and faster for you to migrate thousands of on-premises workloads to AWS. AWS SMS allows you to automate, schedule, and track incremental replications of live server volumes, making it easier for you to coordinate large-scale server migrations.

AWS Snow Family – First Version AWS Snowball Released 2009

- Offers a number of physical devices and capacity points, including some with built-in compute capabilities.
    - These services help physically transport up to Exabytes of data into and out of AWS.
- All Snow family devices are designed to be secure and tamper-resistant while on site or in transit to AWS: the hardware and software is cryptographically signed and all data stored is automatically encrypted using 256-bit encryption keys owned and managed by the customer.

AWS DataSync – Released November 26, 2018

- A data transfer service that makes it easy for you to automate moving data between on-premises storage and Amazon S3 or Amazon Elastic File System (Amazon EFS).
- Automatically handles many of the tasks related to data transfers that can slow down migrations or burden your IT operations, including running your own instances, handling

encryption, managing scripts, network optimization, and data integrity validation.
- Use DataSync to transfer data at speeds up to 10 times faster than open-source tools.
- DataSync uses an on-premises software agent to connect to your existing storage or file systems using the Network File System (NFS) protocol, so you don't have to write scripts or modify your applications to work with AWS APIs.

AWS Transfer Family – Released April 2020

- A fully managed service that enables the transfer of files directly into and out of Amazon S3 using the Secure File Transfer Protocol (SFTP)—also known as Secure Shell (SSH) File Transfer Protocol.
- AWS helps you seamlessly migrate your file transfer workflows to AWS Transfer for SFTP—by integrating with existing authentication systems, and providing DNS routing with Amazon Route 53—so nothing changes for your customers and partners, or their applications.

Migration Evaluator (Formerly TSO logic) – Released July 2020

- Provides a business case for cloud migration.
- Creates a statistical model of compute patterns for all instances, showing how much is being spent, what is over-provisioned, and any opportunities to realize significant savings now and in the future.

Mobile

AWS Amplify- Released November 21, 2017

- Makes it easy to create, configure, and implement scalable mobile and web apps powered by AWS
- Provisions and manages your mobile backend and provides a simple framework to easily integrate your backend with your iOS, Android, Web, and React Native frontends.
- Automates the application release process of both your frontend and backend allowing you to deliver features faster.

Amazon API Gateway – Released July 9, 2015

- Makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.

- Handles all the tasks involved in accepting and processing up to hundreds of thousands of concurrent API calls, including traffic management, authorization and access control, monitoring, and API version management

Amazon Pinpoint – See in "Customer Engagement" Section Above

AWS AppSync – See in "Application Integration" Section Above

AWS Device Farm – Released July 2015

- An app testing service that lets you test and interact with your Android, iOS, and web apps on many devices at once, or reproduce issues on a device in real time
- Lets you test your application on a shared fleet of 2500+ devices or on your own private device lab in the cloud.

Networking & Content Delivery

Amazon VPC – Released August 25, 2009

- Lets you provision a logically isolated section of the AWS Cloud where you can launch AWS resources in a virtual network that you define.
- You have complete control over your virtual networking environment, including selection of your own IP address range, creation of subnets, and configuration of route tables and network gateways.

AWS PrivateLink – Released November 8, 2017

- Simplifies the security of data shared with cloud-based applications by eliminating the exposure of data to the public Internet.
- Provides private connectivity between VPCs, AWS services, and on-premises applications, securely on the Amazon network.
- Makes it easy to connect services across different accounts and VPCs to significantly simplify the network architecture.

Amazon CloudFront – Released November 2008

- A fast content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency, high transfer speeds, all within a developer-friendly environment.

- Works seamlessly with services including AWS Shield for DDoS mitigation, Amazon S3, Elastic Load Balancing or Amazon EC2 as origins for your applications, and Lambda@Edge to run custom code closer to customers' users and to customize the user experience.

Amazon Route 53 – Released December 05, 2010

- A highly available and scalable cloud Domain Name System (DNS) web service.
    - It is designed to give developers and businesses an extremely reliable and cost effective way to route end users to Internet applications by translating names into the numeric IP addresses that computers use to connect to each other.
- Effectively connects user requests to infrastructure running in AWS – such as Amazon EC2 instances, Elastic Load Balancing load balancers, or Amazon S3 buckets – and can also be used to route users to infrastructure outside of AWS.
- Also offers Domain Name Registration – you can purchase and manage domain names and Amazon Route 53 will automatically configure DNS settings for your domains.

Amazon API Gateway – See in "Mobile" Section Above

AWS Direct Connect – Released August 3, 2011

- A cloud service solution that makes it easy to establish a dedicated network connection from your premises to AWS.
- You can establish private connectivity between AWS and your datacenter, office, or colocation environment
    - In many cases this can reduce your network costs, increase bandwidth throughput, and provide a more consistent network experience than Internet-based connections.
- Lets you establish a dedicated network connection between your network and one of the AWS Direct Connect locations

AWS Cloud Map – Released November 28, 2018

- Cloud resource discovery service.

- You can define custom names for your application resources, and it maintains the updated location of these dynamically changing resources.
    - This increases your application availability because your web service always discovers the most up-to-date locations of its resources.
- Allows you to register any application resources, such as databases, queues, microservices, and other cloud resources, with custom names.
- Constantly checks the health of resources to make sure the location is up-to-date.
    - The application can then query the registry for the location of the resources needed based on the application version and deployment environment.

AWS App Mesh- Released November 28, 2018

- A service mesh that provides application-level networking to make it easy for your services to communicate with each other across multiple types of compute infrastructure.
- Standardizes how your services communicate, giving you end-to-end visibility and ensuring high-availability for your applications.
- Makes it easy to run services by providing consistent visibility and network traffic controls for services built across multiple types of compute infrastructure.
- Removes the need to update application code to change how monitoring data is collected or traffic is routed between services.
- Configures each service to export monitoring data and implements consistent communications control logic across your application.
    - This makes it easy to quickly pinpoint the exact location of errors and automatically re-route network traffic when there are failures or when code changes need to be deployed.

AWS Transit Gateway – Released November 26, 2018

- A service that enables customers to connect their Amazon Virtual Private Clouds (VPCs) and their on-premises networks to a single gateway
- You only have to create and manage a single connection from the central gateway in to each Amazon VPC, on-premises data center, or remote office across your network.
    - Acts as a hub that controls how traffic is routed among all the connected networks which act like spokes.

AWS Global Accelerator – Released November 26, 2018

- A networking service that improves the availability and performance of the applications that you offer to your global users.
- Uses the highly available and congestion-free AWS global network to direct internet traffic from your users to your applications on AWS, making your users' experience more consistent.
- Improves application availability by continuously monitoring the health of your application endpoints and routing traffic to the closest healthy endpoints.
- Makes it easier to manage your global applications by providing static IP addresses that act as a fixed entry point to your application hosted on AWS
    - This eliminates the complexity of managing specific IP addresses for different AWS Regions and Availability Zones

Elastic Load Balancing – Released May 2009

- Automatically distributes incoming application traffic across multiple targets
- It can handle the varying load of your application traffic in a single Availability Zone or across multiple Availability Zones.
- Offers three types of load balancers that all feature the high availability, automatic scaling, and robust security necessary to make your applications fault tolerant.
    - Application Load Balancer
    - Network Load Balancer

- Classic Load Balancer

Robotics

AWS RoboMaker – Released November 26, 2018

- A service that makes it easy to develop, test, and deploy intelligent robotics applications at scale. RoboMaker extends the most widely used open-source robotics software framework, Robot Operating System (ROS), with connectivity to cloud services.
- Provides a robotics development environment for application development, a robotics simulation service to accelerate application testing, and a robotics fleet management service for remote application deployment, update, and management.
- Provides the tools to make building intelligent robotics applications more accessible, a fully managed simulation service for quick and easy testing, and a deployment service for lifecycle management.
- Removes the heavy lifting from each step of robotics development so you can focus on creating innovative robotics applications.

Satellite

AWS Ground Station – May 23, 2019

- A fully managed service that lets you control satellite communications, downlink and process satellite data, and scale your satellite operations quickly, easily and cost-effectively without having to worry about building or managing your own ground station infrastructure.
- A fully managed service that will enable customers to easily command, control, and downlink data from satellites.
- When using AWS Ground Station, you can ingest data from the satellite, monitor the satellite health and status, and transmit commands to change the satellite's operations. Incoming data is streamed to an Amazon EC2 instance where it can then be stored or processed using other AWS services.

Security, Identity & Compliance

AWS Resource Access Manager (RAM) – Released November 21, 2018

- A service that enables you to easily and securely share AWS resources with any AWS account or within your AWS Organization.
- RAM eliminates the need to create duplicate resources in multiple accounts, reducing the operational overhead of managing those resources in every single account you own.

AWS Identity & Access Management – Released May 3, 2011

- Enables you to manage access to AWS services and resources securely.
- Using IAM, you can create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources.

AWS IAM User vs. AWS IAM Role for Secure Management

Amazon Cognito – Released July 10, 2014

- Lets you add user sign-up, sign-in, and access control to your web and mobile apps quickly and easily.
- Scales to millions of users and supports sign-in with social identity providers, such as Facebook, Google, and Amazon, and enterprise identity providers via SAML 2.0.

AWS Single Sign-On – Released December 7, 2017

- A cloud SSO service that makes it easy to centrally manage SSO access to multiple AWS accounts and business applications.
    - With just a few clicks, you can enable a highly available SSO service without the upfront investment and on-going maintenance costs of operating your own SSO infrastructure.
- You can easily manage SSO access and user permissions to all of your accounts in AWS Organizations centrally

Amazon GuardDuty – Released November 28, 2017

- A threat detection service that continuously monitors for malicious activity and unauthorized behavior to protect your AWS accounts and workloads
- You now have an intelligent and cost-effective option for continuous threat detection in the AWS Cloud.

        - The service uses machine learning, anomaly detection, and integrated threat intelligence to identify and prioritize potential threats
    - Analyzes tens of billions of events across multiple AWS data sources, such as AWS CloudTrail, Amazon VPC Flow Logs, and DNS logs.
        - With a few clicks in the AWS Management Console, GuardDuty can be enabled with no software or hardware to deploy or maintain. By integrating with AWS CloudWatch Events, GuardDuty alerts are actionable, easy to aggregate across multiple accounts, and straightforward to push into existing event management and workflow systems.

Amazon Inspector – Released April 20, 2016

- An automated security assessment service that helps improve the security and compliance of applications deployed on AWS.
- Automatically assesses applications for exposure, vulnerabilities, and deviations from best practices.
    - After performing an assessment, Amazon Inspector produces a detailed list of security findings prioritized by level of severity.
- Amazon Inspector security assessments help you check for unintended network accessibility of your Amazon EC2 instances and for vulnerabilities on those EC2 instances.
- Amazon Inspector assessments are offered to you as pre-defined rules packages mapped to common security best practices and vulnerability definitions.

Amazon Macie – Released August 14, 2017

- A security service that uses machine learning to automatically discover, classify, and protect sensitive data in AWS.
- Recognizes sensitive data and provides you with dashboards and alerts that give visibility into how this data is being accessed or moved
- The fully managed service continuously monitors data access activity for anomalies, and generates detailed alerts when it detects risk of unauthorized access or inadvertent data leaks.

AWS Certificate Manager – Released January 21, 2016

- A service that lets you easily provision, manage, and deploy public and private Secure Sockets Layer/Transport Layer Security (SSL/TLS) certificates for use with AWS services and your internal connected resources.
- Removes the time-consuming manual process of purchasing, uploading, and renewing SSL/TLS certificates.
- You can quickly request a certificate, deploy it on ACM-integrated AWS resources and let AWS Certificate Manager handle certificate renewals.
- Enables you to create private certificates for your internal resources and manage the certificate lifecycle centrally.

AWS CloudHSM – Released March 26, 2013

- A cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud.
- You can manage your own encryption keys using FIPS 140-2 Level 3 validated HSMs.
- Offers you the flexibility to integrate with your applications using industry-standard APIs, such as PKCS#11, Java Cryptography Extensions (JCE), and Microsoft CryptoNG (CNG) libraries.
- Is standards-compliant and enables you to export all of your keys to most other commercially-available HSMs, subject to your configurations.
- It is a fully-managed service that automates time-consuming administrative tasks for you, such as hardware provisioning, software patching, high-availability, and backups.
- Also enables you to scale quickly by adding and removing HSM capacity on-demand, with no up-front costs.

AWS Directory Service – Released October 21, 2014

- For Microsoft Active Directory, also known as AWS Managed Microsoft AD, enables your directory-aware workloads and AWS resources to use managed Active Directory in the AWS Cloud.

- Built on actual Microsoft Active Directory and does not require you to synchronize or replicate data from your existing Active Directory to the cloud.
- You can use standard Active Directory administration tools and take advantage of built-in Active Directory features.
- With AWS Managed Microsoft AD, you can easily join Amazon EC2 and Amazon RDS for SQL Server instances to your domain, and use AWS Enterprise IT applications such as Amazon WorkSpaces with Active Directory users and groups.

AWS Firewall Manager – Released April 4, 2018

- Security management service that makes it easier to centrally configure and manage AWS WAF rules across your accounts and applications.
- You can easily roll out AWS WAF rules for your Application Load Balancers and Amazon CloudFront distributions across accounts in AWS Organizations.
    - As new applications are created, Firewall Manager also makes it easy to bring new applications and resources into compliance with a common set of security rules from day one.
    - Now you have a single service to build firewall rules, create security policies, and enforce them in a consistent, hierarchical manner across your entire Application Load Balancers and Amazon CloudFront infrastructure.

AWS Key Management Service – Released November 12, 2014

- Makes it easy for you to create and manage keys and control the use of encryption across a wide range of AWS services and in your applications.
- A secure and resilient service that uses FIPS 140-2 validated hardware security modules to protect your keys.
- Is integrated with AWS CloudTrail to provide you with logs of all key usage to help meet your regulatory and compliance needs.

AWS Secrets Manager – Released April 4, 2018

- Helps you protect secrets needed to access your applications, services, and IT resources.

- The service enables you to easily rotate, manage, and retrieve database credentials, API keys, and other secrets throughout their lifecycle.
- Offers secret rotation with built-in integration for Amazon RDS, Amazon Redshift, and Amazon DocumentDB.
- The service is extensible to other types of secrets, including API keys and OAuth tokens.
- Enables you to control access to secrets using fine-grained permissions and audit secret rotation centrally for resources in the AWS Cloud, third-party services, and on-premises.

AWS Secrets Manager Makes Security Simpler

AWS Shield – Released December 1, 2016

- A managed Distributed Denial of Service (DDoS) protection service that safeguards applications running on AWS.
- Provides always-on detection and automatic inline mitigations that minimize application downtime and latency, so there is no need to engage AWS Support to benefit from DDoS protection.
- There are two tiers of AWS Shield – Standard and Advanced:
    - Standard – defends against most common, frequently occurring network and transport layer DDoS attacks that target your web site or applications. When you use AWS Shield Standard you receive comprehensive availability protection against all known infrastructure (Layer 3 and 4) attacks.
    - Advanced -For higher levels of protection against attacks targeting your applications running on Amazon Elastic Compute Cloud (EC2), Elastic Load Balancing (ELB), Amazon CloudFront, AWS Global Accelerator and Amazon Route 53 resources.
        - Provides additional detection and mitigation against large and sophisticated DDoS attacks, near real-time visibility into attacks, and integration with AWS WAF, a web application firewall. Also gives you 24×7 access to the AWS DDoS Response Team (DRT) and protection against DDoS related spikes in your Amazon Elastic Compute Cloud (EC2), Elastic Load

Balancing (ELB), Amazon CloudFront, AWS Global Accelerator and Amazon Route 53 charges.

AWS WAF – Released October 6, 2015

- A web application firewall that helps protect your web applications from common web exploits that could affect application availability, compromise security, or consume excessive resources.
- Gives you control over which traffic to allow or block to your web applications by defining customizable web security rules.
- You can use to create custom rules that block common attack patterns, such as SQL injection or cross-site scripting, and rules that are designed for your specific application.
- Includes a full-featured API that you can use to automate the creation, deployment, and maintenance of web security rules.

AWS Artifact – Released December 7, 2016

- Your go-to, central resource for compliance-related information that matters to you.
    - It provides on-demand access to AWS' security and compliance reports and select online agreements.
- Reports available in AWS Artifact include:
    - Service Organization Control (SOC) reports, Payment Card Industry (PCI) reports, and certifications from accreditation bodies across geographies and compliance verticals that validate the implementation and operating effectiveness of AWS security controls.
- Agreements available in AWS Artifact include:
    - The Business Associate Addendum (BAA) and the Nondisclosure Agreement (NDA).

AWS Security Hub – June 24, 2019

- Gives you a comprehensive view of your high-priority security alerts and compliance status across AWS accounts.
    - There are a range of powerful security tools at your disposal, from firewalls and endpoint protection to vulnerability and compliance scanners.
- You now have a single place that aggregates, organizes, and prioritizes your security alerts, or findings, from multiple AWS

services, such as Amazon GuardDuty, Amazon Inspector, and Amazon Macie, as well as from AWS Partner solutions.

Amazon Detective – Released March 2020

- Makes it easy to analyze, investigate, and quickly identify the root cause of potential security issues or suspicious activities.

Storage

Amazon Simple Storage Service (S3) – Released March 19, 2006 (First AWS Product)

- An object storage service that offers industry-leading scalability, data availability, security, and performance.
    - This means customers of all sizes and industries can use it to store and protect any amount of data for a range of use cases.
- Provides easy-to-use management features so you can organize your data and configure finely-tuned access controls to meet your specific business, organizational, and compliance requirements.
- Designed for 99.999999999% (11 9's) of durability, and stores data for millions of applications for companies all around the world.

Amazon Elastic Block Store (EBS) – Announced August 20, 2008

- Provides persistent block storage volumes for use with Amazon EC2 instances in the AWS Cloud.
- Each Amazon EBS volume is automatically replicated within its Availability Zone to protect you from component failure, offering high availability and durability.
- Amazon EBS volumes offer the consistent and low-latency performance needed to run your workloads.
- You can scale your usage up or down within minutes – all while paying a low price for only what you provision.
- Designed for application workloads that benefit from fine tuning for performance, cost and capacity.

Amazon Elastic File System (EFS) – Released June 29, 2016

- Provides a simple, scalable, elastic file system for Linux-based workloads for use with AWS Cloud services and on-premises resources.
- It is built to scale on demand to petabytes without disrupting applications, growing and shrinking automatically as you add and remove files, so your applications have the storage they need – when they need it.
    - It is designed to provide massively parallel shared access to thousands of Amazon EC2 instances, enabling your applications to achieve high levels of aggregate throughput and IOPS with consistent low latencies.
- A fully managed service that requires no changes to your existing applications and tools, providing access through a standard file system interface for seamless integration.
- **There is a Standard and an Infrequent Access storage class** available with Amazon EFS.
- A regional service storing data within and across multiple Availability Zones (AZs) for high availability and durability
- Is well suited to support a broad spectrum of use cases from highly parallelized, scale-out workloads that require the highest possible throughput to single-threaded, latency-sensitive workloads.

Amazon S3 Glacier – Released August 21, 2012

- A secure, durable, and extremely low-cost cloud storage service for data archiving and long-term backup.
- It is designed to deliver 99.999999999% durability, and provides comprehensive security and compliance capabilities that can help meet even the most stringent regulatory requirements.
- Provides query-in-place functionality, allowing you to run powerful analytics directly on your archive data at rest.
- Customers can store data for as little as $0.004 per gigabyte per month, a significant savings compared to on-premises solutions.

- To keep costs low yet suitable for varying retrieval needs, Amazon S3 Glacier provides three options for access to archives, from a few minutes to several hours.

AWS Storage Gateway – Released January 24, 2012

- A hybrid storage service that enables your on-premises applications to seamlessly use AWS cloud storage.
- You can use the service for backup and archiving, disaster recovery, cloud data processing, storage tiering, and migration.
- The service helps you reduce and simplify your datacenter and branch or remote office storage infrastructure.
- Your applications connect to the service through a virtual machine or hardware gateway appliance using standard storage protocols, such as NFS, SMB and iSCSI.
- Connects to AWS storage services,providing storage for files, volumes, snapshots, and virtual tapes in AWS.
- Includes a highly-optimized data transfer mechanism, with bandwidth management, automated network resilience, and efficient data transfer, along with a local cache for low-latency on-premises access to your most active data.

AWS Snow Family – First Version AWS Snowball Released 2009

- Offers a number of physical devices and capacity points, including some with built-in compute capabilities.
- These services help physically transport up to Exabytes of data into and out of AWS.
- The Snow family of services are owned and managed by AWS and integrate with AWS security, monitoring, storage management and computing capabilities.
- All Snow family devices are designed to be secure and tamper-resistant while on site or in transit to AWS: the hardware and software is cryptographically signed and all data stored is automatically encrypted using 256-bit encryption keys owned and managed by the customer.
- Customers can use the AWS Key Management Service (KMS) to generate and manage the keys. Upon job completion devices are erased using NIST media sanitation guidelines.

- The AWS Snow family are physical devices that help migrate large amounts of data into and out of the cloud without depending on networks.
    - This helps you apply the wide variety of AWS services for analytics, file systems and archives to your data.
- Snowball is a suitcase-sized device, Snowball Edge is a rack mountable and clusterable suitcase sized device with compute capabilties, and Snowmobile is a shipping container moved with a tractor-trailer.
    - These services can assist with data migration, disaster recovery, data center shutdown and remote data collection projects.

Amazon FSx for Lustre – Released November 28, 2018

- Provides a high-performance file system optimized for fast processing of workloads such as machine learning, high performance computing (HPC), video processing, financial modeling, and electronic design automation (EDA).
    - These workloads commonly require data to be presented via a fast and scalable file system interface, and typically have data sets stored on long-term data stores like Amazon S3.
- You can launch and run a file system that provides sub-millisecond access to your data and allows you to read and write data at speeds of up to hundreds of gigabytes per second of throughput and millions of IOPS.
- Works natively with Amazon S3, making it easy for you process cloud data sets with high performance file systems
- You can also use as a standalone high-performance file system to burst your workloads from on-premises to the cloud.
    - By copying on-premises data to an FSx for Lustre file system, you can make that data available for fast processing by compute instances running on AWS

Amazon FSx for Windows File Server – Released November 28, 2018

- Provides a fully managed native Microsoft Windows file system so you can easily move your Windows-based applications that require file storage to AWS.
- Built on Windows Server, Amazon FSx provides shared file storage with the compatibility and features that your Windows-based applications rely on, including full support for the SMB protocol and Windows NTFS, Active Directory (AD) integration, and Distributed File System (DFS).
- Uses SSD storage to provide the fast performance your Windows applications and users expect, with high levels of throughput and IOPS, and consistent sub-millisecond latencies.
    - This compatibility and performance is particularly important when moving workloads that require Windows shared file storage, like CRM, ERP, and .NET applications, as well as home directories.
- You can launch highly durable and available Windows file systems that can be accessed from up to thousands of compute instances using the industry-standard SMB protocol.
- Eliminates the typical administrative overhead of managing Windows file servers

AWS Backup – Released January 16, 2019

- A fully managed backup service that makes it easy to centralize and automate the back up of data across AWS services in the cloud as well as on premises using the AWS Storage Gateway.
- You can centrally configure backup policies and monitor backup activity for AWS resources, such as:
    - Amazon EBS volumes, Amazon RDS databases, Amazon DynamoDB tables, Amazon EFS file systems, and AWS Storage Gateway volumes.
- Automates and consolidates backup tasks previously performed service-by-service, removing the need to create custom scripts and manual processes.

- With just a few clicks in the AWS Backup console, you can create backup policies that automate backup schedules and retention management.
- Provides a fully managed, policy-based backup solution, simplifying your backup management, enabling you to meet your business and regulatory backup compliance requirements.

CloudEndure Disaster Recovery

- Highly automated disaster recovery.
- Continuously replicates your machines from physical, virtual, or cloud-based infrastructure to a low-cost staging area into a low-cost staging area in your target AWS account and preferred Region.
- Minimizes downtime and data loss by providing fast, reliable recovery into AWS.

Quantum Technologies

Amazon Braket – Released August 2020

- A fully managed service that makes it easy for scientists, researchers, and developers to build, test, and run quantum computing algorithms
- Provides a development environment to design your own quantum algorithms from scratch or choose from a set of pre-built algorithms, test them on simulated quantum computers, and run them on your choice of different quantum hardware technologies.
- Provides a fully managed simulation service to help troubleshoot and verify your implementation.

AWS Best Practices #14

AWS Services List

We'll continue to update this AWS services list as AWS continues to announce and release new products. What's your take? What products are you excited to try? What's on your organization's AWS services list? Let us know, we'd love to hear your feedback.

Is your AWS environment cost optimized? Would you like to optimize it – automatically? Check out a free trial of ParkMyCloud to get started.