Cloud Computing with AWS

AWS Cloud Club Indian Institute Of Technology Madras

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Captain

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AWS Code of Conduct

What is Cloud Computing?

"Cloud computing is the **on-demand** delivery of IT resources over the Internet with **pay-as-you-go pricing**. Instead of **buying, owning, and maintaining** physical data centers and servers, you can access technology services, such as computing power, storage, and databases, on an **as-needed basis** provider."
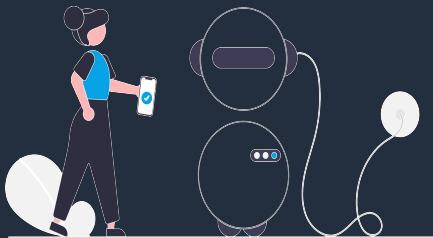
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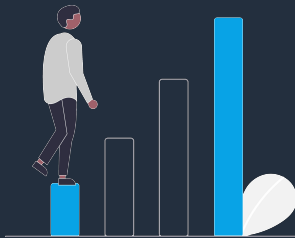
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Benefits of Cloud Computing

Agility

Easy access to resources from infrastructure services to IoT (Internet of Things), machine learning, data analytics, and so much more!

Elasticity

Provision only the resources you need. You can easily scale up or down based on your needs.

Go Global in Minutes

Deploy your applications globally with just a few clicks.

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What is Amazon Web Services (AWS)?

A broad and deep platform that helps customers build sophisticated, scalable, secure applications

What are the advantages of moving to the cloud?

Agility   Teams can experiment and innovate more quickly and frequently

Cost Savings   Only pay for what you use, lower upfront expenses

Elasticity   Easily Scale up or down with the needs of the business

Innovate Faster   Ability to focus on business differentiators, not infrastructure

Go Global in Minutes   Most extensive, reliable, and secure global cloud infrastructure
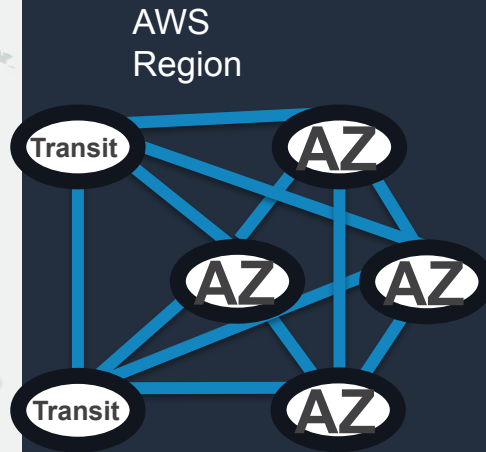
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Scale globally with resilience in every region

The largest global foot print consistently built with a multi-AZ and multi-datacenter design

- Regions
- Coming Soon

Region & Number of Availability Zones

Announced Regions
Austria, Canada, India, Israel, New Zealand, Spain, Switzerland, and United Arab Emirates

26 Regions
84 Availability Zones
310+ Points of Presence

AWS Region

A Region is a physical location in the world where we have multiple **Availability Zones.**

AWS Availability Zone (AZ)

Availability Zones consist of one or more discrete data centers, each with redundant power, networking, and connectivity, housed in separate facilities.

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AWS Services - Broad and Deep **Functionality**

TECHNICAL & BUSINESS SUPPORT

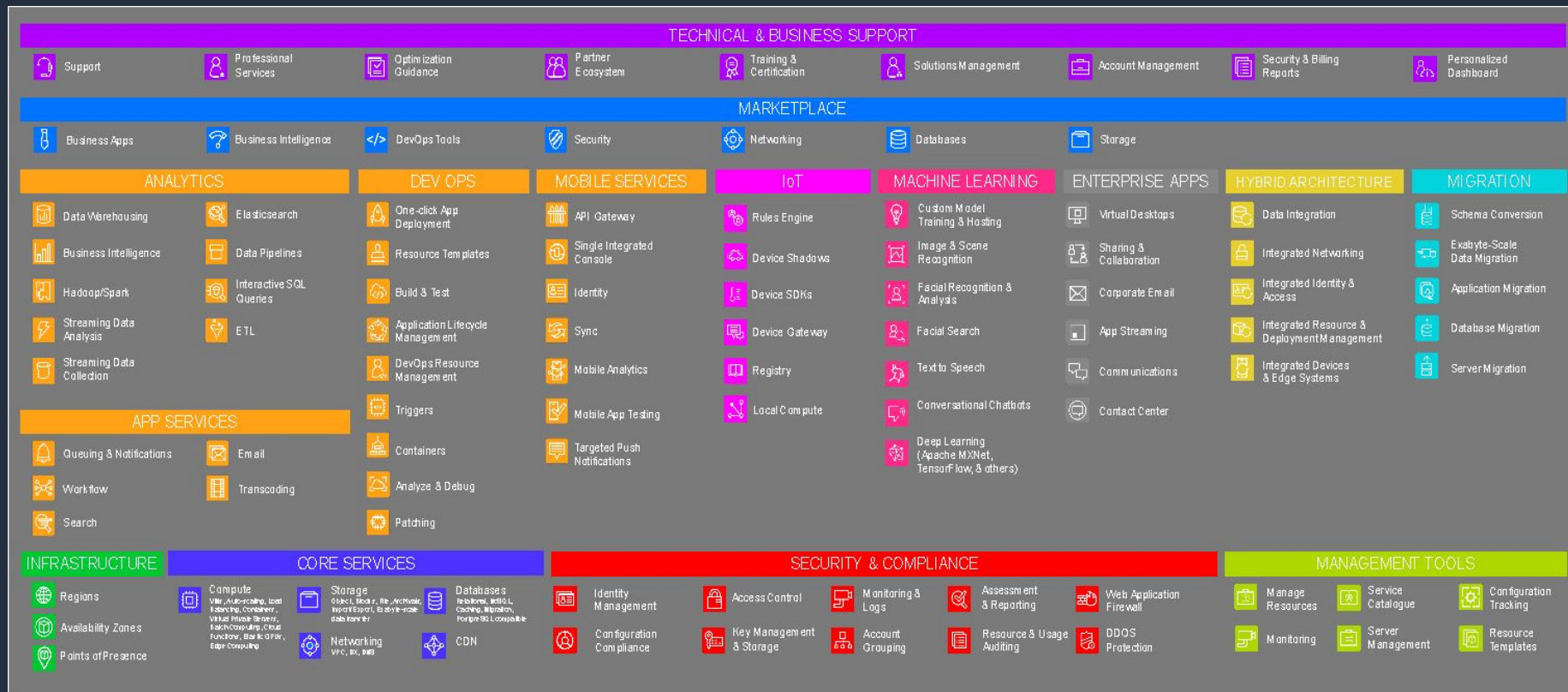|							
Support	Professional Services	Optimization Guidance	Partner Ecosystem	Training & Certification	Solutions Management	Account Management	Security & Billing Reports
							Personalized Dashboard

MARKETPLACE

Business Apps	Business Intelligence	DevOps Tools	Security	Networking	Databases	Storage

ANALYTICS		DEV OPS	MOBILE SERVICES	IoT	MACHINE LEARNING	ENTERPRISE APPS	HYBRID ARCHITECTURE	MIGRATION
Data Warehousing	Elasticsearch	One-click App Deployment	API Gateway	Rules Engine	Custom Model Training & Hosting	Virtual Desktops	Data Integration	Schema Conversion
Business Intelligence	Data Pipelines	Resource Templates	Single Integrated Console	Device Shadows	Image & Scene Recognition	Sharing & Collaboration	Integrated Networking	Exabyte-Scale Data Migration
Hadoop/Spark	Interactive SQL Queries	Build & Test	Identity	Device SDKs	Facial Recognition & Analysis	Corporate Email	Integrated Identity & Access	Application Migration
Streaming Data Analysis	ETL	Application Lifecycle Management	Sync	Device Gateway	Facial Search	App Streaming	Integrated Resource & Deployment Management	Database Migration
Streaming Data Collection		DevOps Resource Management	Mobile Analytics	Registry	Text to Speech	Communications	Integrated Devices & Edge Systems	Server Migration

APP SERVICES

Queuing & Notifications	Email	Triggers	Mobile App Testing	Local Compute	Conversational Chatbots	Contact Center
Workflow	Transcoding	Containers	Targeted Push Notifications			
Search		Analyze & Debug			Deep Learning (Apache MXNet, TensorFlow, & others)	
		Patching				

INFRASTRUCTURE	CORE SERVICES			SECURITY & COMPLIANCE					MANAGEMENT TOOLS		
Regions	Compute VMs, Auto-scaling, Load balancing, Container, Virtual Private Servers, BatchComputing, Cloud Functions, Elastic GPU, Edge Computing	Storage Object, Block, File, Archival, Import/Export, Exabyte-scale data transfer	Databases Relational, NoSQL, Caching, Migration, Postgre-SQL compatible	Identity Management	Access Control	Monitoring & Logs	Assessment & Reporting	Web Application Firewall	Manage Resources	Service Catalogue	Configuration Tracking
Availability Zones	Networking VPC, DX, DNS		CDN	Configuration Compliance	Key Management & Storage	Account Grouping	Resource & Usage Auditing	DDOS Protection	Monitoring	Server Management	Resource Templates
Points of Presence											

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Industry leaders are building on AWS

Netflix

- AWS for databases, analytics, rec engines, video transcoding, etc.
- Functions that use 100,000+ server instances on AWS.

Toyota

- AWS allows it to innovate across its business.
- Keeps track of vehicle journeys from manufacturing to dealership, leveraging Toyota Connected data lake to detect vehicle defects and improve product quality, etc.

Moderna

- AWS is preferred cloud provider, analytics, & ML workloads.
- Supports every aspect of its digital, data-driven operations. Reduces time and cost of bringing life-saving therapies to market.

More stories at aws.amazon.com/solutions/case-studies/innovators

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Resources

s12d.com/students

10 min

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AWS Student Hub

Newly launched for student and early career cloud learners

Applied labs & workshops

AWS Cloud Clubs

Events

More ways to learn

s12d.com/students

AWS Cloud Clubs

Student-focused, peer-driven user groups for post-secondary level students worldwide (any learner age 18-28 regardless of university status).

Benefits for Captains & Members: Exam vouchers, AWS credits, exclusive experiences in partnership with AWS employees, special swag, professional coaching and more!

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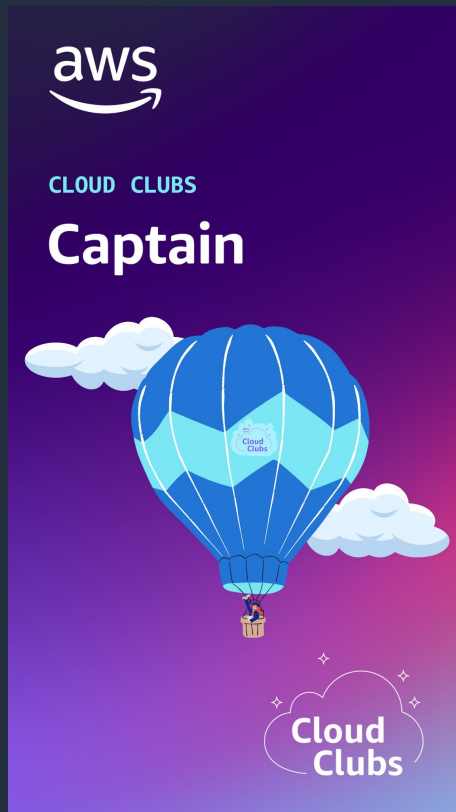
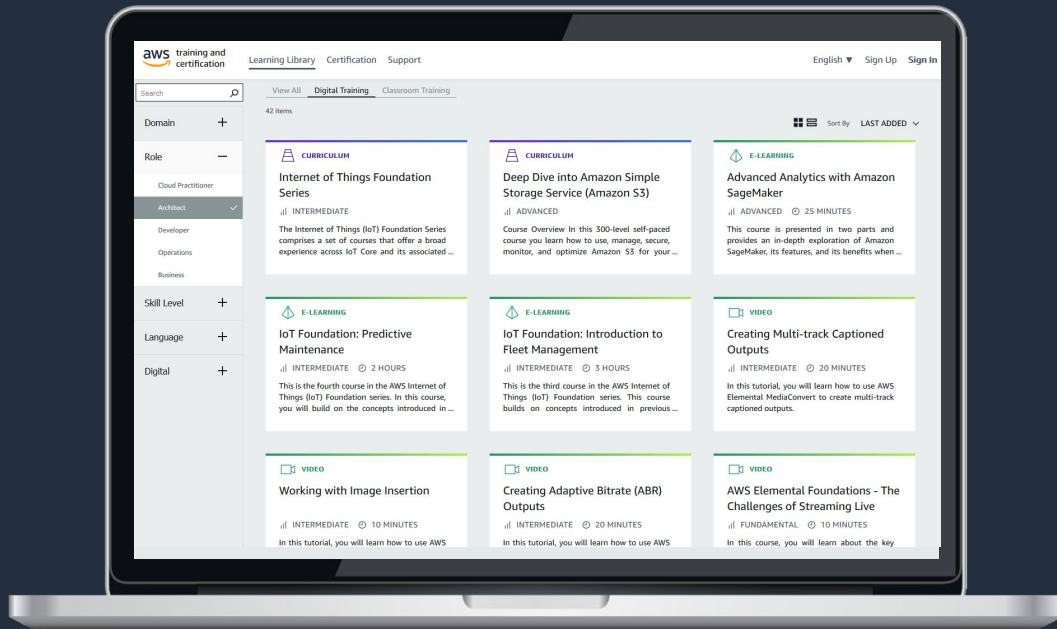# Digital Training

On-demand courses to build new cloud skills

Cost-effective

Over 500 free training courses

Flexible

Search by role, domain, specific services, and level of expertise

Convenient

Access all AWS Classroom Training courses virtually to bring the learning experience to you; anytime, anywhere

Get started at **aws.training**

AWS Certifications

What are IT leaders say about having AWS Certified staff?

97%
Say it puts their company in a better **competitive position**

91%
say it drives **innovation**

90%
report increased **productivity**

Available AWS Certifications

aws certified
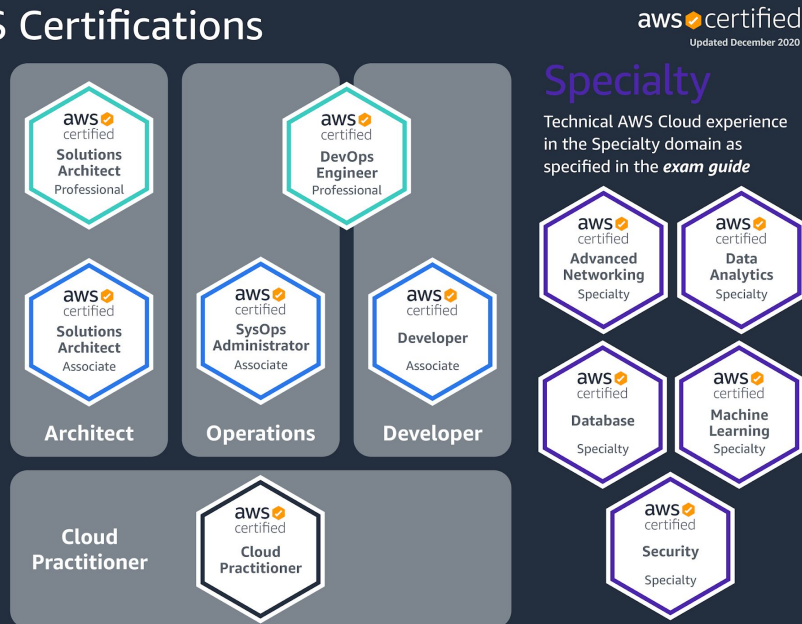Updated December 2020

Professional
Two years of comprehensive experience designing, operating, and troubleshooting solutions using the AWS Cloud

Associate
One year of experience solving problems and implementing solutions using the AWS Cloud

Foundational
Six months of fundamental AWS Cloud and industry knowledge

aws certified
Solutions Architect
Professional

aws certified
DevOps Engineer
Professional

aws certified
Solutions Architect
Associate

aws certified
SysOps Administrator
Associate

aws certified
Developer
Associate

Architect

Operations

Developer

Cloud Practitioner

aws certified
Cloud Practitioner

Specialty
Technical AWS Cloud experience in the Specialty domain as specified in the **exam guide**

aws certified
Advanced Networking
Specialty

aws certified
Data Analytics
Specialty

aws certified
Database
Specialty

aws certified
Machine Learning
Specialty

aws certified
Security
Specialty

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Overview of AWS Certifications

Why AWS Certifications?

- Demonstrate expertise in AWS services.
- Gain recognition in the industry and boost your career prospects.

Certification Paths:

- Foundational: AWS Certified Cloud Practitioner. [Suitable for Beginners]
- Associate: Solutions Architect, Developer, SysOps Administrator.
- Professional: Solutions Architect, DevOps Engineer.
- Specialty: Security, Data Analytics, Machine Learning, and more.

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How to Prepare for AWS Certifications

Plan Your Path:

- Choose a certification that aligns with your goals (e.g., foundational for beginners, specialty for advanced users).
- Review the exam guide for detailed objectives.

Leverage AWS Resources:
- AWS Training and Certification website: AWS Certification Prep.
- AWS Skill Builder: Self-paced and guided courses.
- Hands-on experience with AWS Free Tier.

Practice:
- Attempt official AWS practice exams.
- Explore mock tests on platforms like Tutorials Dojo and Exam Pro. [Dedicated Slides on Resources can be found later]

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Tips to Pass AWS Certification Exams

Understand the Exam:

- Learn the question formats: multiple-choice, multiple-response, scenario-based.
- Know the time duration and number of questions for your exam.

Focus on Key Areas:

- Core AWS services: Compute (EC2, Lambda), Storage (S3, EBS), and Networking (VPC).
- Security best practices, IAM roles, and encryption.

Hands-on Experience:

- Use AWS Free Tier for practical exposure.
- Deploy and manage resources to solidify concepts.

Effective Exam Strategy:

- Read questions carefully and identify keywords.
- Eliminate wrong answers to improve your odds.
- Manage your time effectively—don't spend too long on one question.

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Exam Preparation Resources

- **Official AWS Websites:** https://aws.amazon.com/certification/certification-prep/
- See Ayinde's blog for accessing the free official practice exam: https://dev.to/aws-builders/how-to-get-aws-official-practice-exam-for-free-485g
- Udemy: If you have access to Udemy, watch the courses on AWS Certification for inspiration and practice questions
- **Tutorials Dojo - free courses:** https://portal.tutorialsdojo.com/product-category/aws/aws-digital-courses-2/
- **AWS Skill Builder:** https://explore.skillbuilder.aws/learn
- **AWS Educate:** https://aws.amazon.com/education/awseducate/- free practice questions
- **AWS Boy:** https://www.awsboy.com/aws-practice-exams/practitioner/- free practice questions
- **Exam Pro:** https://app.exampro.co/student/journey/aif-c01- free courses and practice questions
- **Cloud Quest:** https://explore.skillbuilder.aws/learn/course/internal/view/elearning/11458/aws-cloud-quest-cloud-practitioner

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