# AWS Learning Roadmap

## 1.Foundational Concepts

- **Cloud Computing Basics**
  - Understanding IaaS, PaaS, SaaS
  - Benefits of cloud computing: scalability, cost-efficiency, flexibility
- **AWS Global Infrastructure**
  - Regions, Availability Zones, Edge Locations
- **Core AWS Services**
  - Compute: EC2, Lambda
  - Storage: S3, EBS
  - Networking: VPC, Route 53
  - Databases: RDS, DynamoDB
  - Security: IAM, KMS

## 2.Hands-On Practice

- **AWS Free Tier**
  - Utilize free resources to experiment with services
- **AWS Management Console & CLI**
  - Navigate and manage AWS services
- **Deploying Applications**
  - Launching a simple web application using EC2 and S3

## 3.Intermediate Topics

- **Infrastructure as Code**
  - Introduction to AWS CloudFormation and Terraform
- **Monitoring & Logging**
  - CloudWatch, CloudTrail
- **Security Best Practices**
  - IAM policies, roles, and best practices
- **Cost Management**
  - AWS Pricing Calculator, Budgets, Cost Explorer

## 4.Advanced Topics

- **Serverless Architecture**
  - Deep dive into AWS Lambda, API Gateway
- **Containers**
  - ECS, EKS, Docker on AWS
- **CI/CD Pipelines**
  - AWS CodePipeline, CodeBuild, CodeDeploy
- **Advanced Networking**

○ VPC peering, Transit Gateway, Direct Connect

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# 📚 Recommended Resources

- **AWS Training and Certification**
  - [AWS Skill Builder](#)
  - [AWS Certification Paths PDF](#)
- **Online Courses**
  - [Coursera: AWS Fundamentals](#)
  - [Udemy: AWS Certified Solutions Architect](#)
- **Books**
  - *AWS Certified Solutions Architect Official Study Guide*
  - *Amazon Web Services in Action* by Michael Wittig and Andreas Wittig
- **Hands-On Labs**
  - [Qwiklabs](#)
  - [A Cloud Guru](#)
- **Community & Forums**
  - [AWS Reddit Community](#)
  - [Stack Overflow AWS Tag](#)

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# 🏅 AWS Certifications Overview

AWS certifications are categorized into four levels:

1. **Foundational**
   - *AWS Certified Cloud Practitioner*
     - Ideal for individuals new to the cloud
     - No prerequisites
     - [Certification Details](#)
2. **Associate**
   - *AWS Certified Solutions Architect – Associate*
     - Focuses on designing distributed systems
   - *AWS Certified Developer – Associate*
     - Emphasizes developing and maintaining applications
   - *AWS Certified SysOps Administrator – Associate*
     - Centers on deployment, management, and operations
3. **Professional**
   - *AWS Certified Solutions Architect – Professional*
     - Advanced expertise in designing distributed systems
   - *AWS Certified DevOps Engineer – Professional*
     - Focuses on provisioning, operating, and managing applications
4. **Specialty**
   - *AWS Certified Advanced Networking – Specialty*

- ○ *AWS Certified Security – Specialty*
- ○ *AWS Certified Machine Learning – Specialty*
- ○ *AWS Certified Data Analytics – Specialty*
- ○ *AWS Certified Database – Specialty*
- ○ *AWS Certified SAP on AWS – Specialty*
- ○ *AWS Certified Alexa Skill Builder – Specialty*

**How to Obtain Certifications:**

- ● **Preparation**
  - ○ Utilize AWS's official study materials and practice exams
  - ○ Engage in hands-on labs and real-world projects
- ● **Scheduling Exams**
  - ○ Exams can be scheduled through [AWS Certification](#)
  - ○ Options for online proctored exams or testing centers

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## 🛤️ Career Paths and Certification Alignment

| Career Path | Recommended Certifications |
| --- | --- |
| **Cloud Architect** | Cloud Practitioner → Solutions Architect Associate → Solutions Architect Professional |
| **Cloud Developer** | Cloud Practitioner → Developer Associate → DevOps Engineer Professional |
| **DevOps Engineer** | Cloud Practitioner → SysOps Administrator Associate → DevOps Engineer Professional |
| **Data Engineer** | Cloud Practitioner → Data Analytics Specialty |
| **Machine Learning Engineer** | Cloud Practitioner → Machine Learning Specialty |
| **Security Specialist** | Cloud Practitioner → Security Specialty |

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