Aws Cloud Practitioner Exam Guide

AWS Cloud Practitioner Exam (CLF-C02) – Domain 1 Detailed Notes

1.1 Benefits of the AWS Cloud

- **Value proposition** – Pay only for what you use, scale instantly, and access a vast set of services without buying or maintaining physical hardware.

- **Economies of scale** – AWS operates at massive scale, lowering costs per unit of compute/storage so customers get cheaper pricing as usage grows.

- **Global infrastructure** – Dozens of Regions and Availability Zones let you deploy apps close to users worldwide for low latency and fast rollout.

- **High availability** – Services are built across multiple AZs to keep workloads running even if one location fails.

- **Elasticity** – Automatically add or remove resources to match demand, avoiding over- or under-provisioning.

- **Agility** – Quickly experiment, build, and deploy new features without long hardware lead times.

1.2 AWS Cloud Design Principles

- **AWS Well-Architected Framework** – A set of best practices for building secure, efficient, and cost-effective workloads.

- **Operational Excellence** – Continuously improve operations through monitoring, automation, and quick recovery from failure.

- **Security** – Protect data, systems, and assets with least-privilege access, encryption, and monitoring.

- **Reliability** – Design for fault tolerance and automatic recovery to meet uptime goals.

- **Performance Efficiency** – Use the right resources and architectures for optimal performance at minimal cost.

- **Cost Optimization** – Avoid unnecessary spend through right-sizing, managed services, and pricing models.

- **Sustainability** – Minimize environmental impact by using energy-efficient infrastructure.

1.3 Migration to AWS

- **Cloud adoption strategies** – Phased approaches like rehosting (lift-and-shift), replatforming, or refactoring to move workloads safely.

- **AWS Cloud Adoption Framework (CAF)** – Guidance that reduces risk, improves ESG (environmental, social, governance) outcomes, and boosts revenue and operational efficiency during migration.

- **Migration methods** – Database replication or using **AWS Snowball** devices to physically transfer large data sets when internet transfer is impractical.

1.4 Cloud Economics

- **Fixed vs. variable costs** – On-premises requires large upfront hardware (fixed), while AWS lets you pay only for actual use (variable).

- **On-prem vs. cloud costs** – Cloud removes expenses like data-center power, cooling, and hardware maintenance.

- **Rightsizing** – Continually adjust resource sizes to match actual demand and avoid overpaying.

- **Licensing options** – Bring Your Own License (BYOL) if you already own software licenses, or use AWS-included licenses for simplicity.

- **Automation benefits** – Tools like **AWS CloudFormation** automate provisioning/configuration to reduce manual effort and errors.

- **Managed services** – Services such as **Amazon RDS** (databases), **ECS/EKS** (container orchestration), and **DynamoDB** (NoSQL database) offload operations so you focus on applications, not infrastructure.

Domain 2: Security & Compliance

2.1 AWS Shared Responsibility Model

- **Core idea** – Security is a partnership: AWS secures the cloud infrastructure; customers secure what they run **in** the cloud.

- **AWS responsibilities** – Physical data centers, hardware, global network, and managed service infrastructure.

- **Customer responsibilities** – Data, access control, OS & app configuration, network settings (e.g., Security Groups, NACLs).

- **Shared responsibilities** – Some tasks overlap (patching, encryption) depending on the service.

- **Service-dependent shift** – Managed services (e.g., RDS, Lambda) shift more security to AWS; self-managed (EC2) keeps more responsibility on the customer.

2.2 Cloud Security, Governance & Compliance Concepts

- **AWS compliance & governance** – Frameworks and certifications (ISO, SOC, GDPR) that show AWS meets global and industry requirements.

- **Benefits of cloud security** – Built-in tools like encryption, isolated networks, and automated monitoring reduce risk.

- **Log capture & location** – Use CloudTrail, CloudWatch Logs, and S3 to store and analyze security logs.

- **Finding compliance info** – **AWS Artifact** provides audit reports and agreements on demand.

- **Regional/industry needs** – Some data (e.g., healthcare HIPAA, EU GDPR) must stay within specific regions.

- **Customer security tools** – Amazon Inspector (vulnerability scanning), Security Hub (central security view), GuardDuty (threat detection), AWS Shield (DDoS protection).

- **Encryption types** – Encryption **in transit** (TLS) vs. **at rest** (KMS-managed keys).

- **Governance & compliance services** –

  - Monitoring: **CloudWatch**

  - Auditing: **CloudTrail**, **Audit Manager**, **Config**

  - Reporting: **IAM Access Analyzer** & access reports

- **Service-specific compliance** – Some services (e.g., S3 vs. RDS) have unique security configurations to meet compliance standards.

2.3 AWS Access Management

- **IAM fundamentals** – Manage users, groups, roles, and policies to control access.

- **Root user protection** – Root has full account control; secure it with MFA and never use it for daily tasks.

- **Least privilege principle** – Give only the permissions required for a specific task.

- **IAM Identity Center (AWS SSO)** – Centralize user authentication across AWS accounts and apps.

- **Credentials & policies** – Use strong password policies, rotate access keys, and store secrets in **Secrets Manager** or **Systems Manager Parameter Store**.

- **Authentication methods** – Multi-factor authentication (MFA), IAM roles for cross-account access, and SAML/OIDC federation.

- **Root-only tasks** – e.g., changing account settings, closing the AWS account, modifying billing info.

2.4 Security Components & Resources

- **AWS security features** –

  - **Security Groups**: virtual firewalls for EC2 instances.

  - **Network ACLs**: subnet-level inbound/outbound rules.

- **AWS WAF**: protects web apps from common exploits (e.g., SQL injection).

- **Third-party tools** – Security products from AWS Marketplace can extend protection (e.g., advanced firewalls).

- **Security documentation & learning** – AWS Knowledge Center, Security Center, and official Security Blog provide best-practice guides.

- **Issue detection** – **AWS Trusted Advisor** checks for security gaps like open ports or weak IAM permissions.

Domain 3: Cloud Technology & Services

3.1 Deployment & Operations in AWS

- **Provisioning methods** – Use the **Management Console** (web UI), **CLI**, **SDKs/APIs**, or Infrastructure as Code (**CloudFormation**, **Terraform**) to create resources.

- **One-time vs repeatable** – Ad-hoc console changes work for testing; IaC provides automated, version-controlled deployments.

- **Deployment models** –

    - **Cloud**: fully on AWS

    - **Hybrid**: mix of AWS + on-premises

    - **On-premises**: AWS Outposts or Snowball Edge bring AWS services to local data centers.

- **Connectivity options** – Public internet access, **AWS Site-to-Site VPN** for secure tunnels, or **Direct Connect** for dedicated private links.

3.2 AWS Global Infrastructure

- **Regions** – Separate geographic areas hosting multiple Availability Zones (AZs).

- **Availability Zones** – Independent data centers in a Region with isolated power/network; use multiple AZs for **high availability**.

- **Edge locations** – Global points for caching and low-latency delivery via **CloudFront** or **Global Accelerator**.

- **Multi-Region use** – Disaster recovery, business continuity, meeting data-sovereignty rules, or serving global users with low latency.

- **Wavelength & Local Zones** – Extend AWS compute/storage closer to end users for ultra-low-latency applications like 5G or gaming.

3.3 Compute Services

- **Amazon EC2** – Virtual servers with instance families (compute-optimized, memory-optimized, storage-optimized, etc.).

- **Containers** – **ECS** (AWS-managed), **EKS** (Kubernetes), **Fargate** (serverless container compute).

- **Serverless** – **AWS Lambda** runs code on demand without managing servers.

- **Auto Scaling** – Adds/removes instances automatically for elasticity.

- **Elastic Load Balancing (ELB)** – Distributes traffic across multiple instances or containers for reliability.

3.4 Database Services

- **Managed relational** – **Amazon RDS** (supports MySQL, PostgreSQL, etc.) and **Amazon Aurora** (high-performance MySQL/PostgreSQL-compatible).

- **NoSQL** – **Amazon DynamoDB** for key-value and document workloads.

- **In-memory** – **Amazon ElastiCache** (Redis/Memcached) for fast caching.

- **Migration tools** – **AWS Database Migration Service (DMS)** and **Schema Conversion Tool (SCT)** move and transform existing databases.

- **Self-managed** – Run any DB engine yourself on EC2 if full OS control is required.

3.5 Network Services

- **Amazon VPC** – Private virtual network; includes subnets, Internet/NAT Gateways, and routing tables.

- **Security** – **Security Groups** (instance-level) and **Network ACLs** (subnet-level) control inbound/outbound traffic.

- **Amazon Route 53** – Highly available DNS and domain registration.

- **Edge services** – **CloudFront** (content delivery) and **Global Accelerator** (global traffic routing).

- **Connectivity to AWS** – **VPN** for encrypted internet tunnels or **Direct Connect** for dedicated private circuits.

3.6 Storage Services

- **Object storage** – **Amazon S3** stores unstructured data like media files or backups.

- **S3 storage classes** – Standard, Standard-IA, One Zone-IA, Intelligent-Tiering, Glacier, and Glacier Deep Archive for cost/availability trade-offs.

- **Block storage** – **Amazon EBS** for EC2 volumes; **Instance Store** for ephemeral high-speed storage.

- **File storage** – **Amazon EFS** (Linux) and **Amazon FSx** (Windows or Lustre).

- **Hybrid/cached** – **AWS Storage Gateway** integrates on-premises apps with S3.

- **Lifecycle policies** – Automate data movement between S3 classes or to Glacier for cost savings.

- **AWS Backup** – Centralized backup across AWS services.

3.7 AI/ML & Analytics Services

- **AI/ML**

  - **Amazon SageMaker** – Build, train, deploy ML models.

  - **Amazon Lex** – Conversational chatbots.

- **Amazon Kendra** – Intelligent search across documents.
- **Analytics**
    - **Amazon Athena** – Serverless SQL queries on S3 data.
    - **Amazon Kinesis** – Real-time streaming analytics.
    - **AWS Glue** – ETL (extract, transform, load) data prep.
    - **Amazon QuickSight** – Interactive BI dashboards.

3.8 Other Key Service Categories

- **Application integration** – **Amazon EventBridge** (event bus), **SNS** (pub/sub messaging), **SQS** (message queues).

- **Business applications** – **Amazon Connect** (cloud contact center), **SES** (transactional email).

- **Customer engagement/support** – **AWS Activate** (startup credits), **AWS IQ** (on-demand experts), **AWS Managed Services (AMS)**, **AWS Support plans**.

- **Developer tools** – **CodeCommit** (Git repo), **CodeBuild**, **CodeDeploy**, **CodePipeline** (CI/CD), **Cloud9** (IDE), **CloudShell** (browser CLI), **AppConfig**, **CodeArtifact**, **CodeStar**, **X-Ray** (tracing).

- **End-user computing** – **Amazon AppStream 2.0**, **WorkSpaces**, **WorkSpaces Web** for delivering virtual desktops/apps.

- **Frontend & mobile** – **AWS Amplify** (full-stack web/mobile), **AppSync** (GraphQL APIs).

- **IoT** – **AWS IoT Core** (device connectivity) and **IoT Greengrass** (edge processing).

Domain 4: Billing, Pricing & Support

4.1 AWS Pricing Models

- **Compute purchasing options**

    - **On-Demand Instances** – Pay by the second/hour, no commitment; best for unpredictable workloads.

    - **Reserved Instances (RI)** – 1- or 3-year commitment for up to 72% savings; Standard or Convertible for flexibility.

    - **Savings Plans** – Similar savings as RI but apply across compute services when you commit to a $/hr spend.

    - **Spot Instances** – Bid on unused capacity for up to 90% off; may be interrupted if AWS needs capacity.

    - **Dedicated Hosts/Instances** – Physical or single-tenant servers for compliance or license needs.

    - **Capacity Reservations** – Reserve capacity in a specific AZ for critical workloads without long-term pricing commitment.

- **Data transfer charges** – Inbound data to AWS is free; outbound (e.g., to internet or between Regions) is billed per GB.

- **Storage tiers** – Each S3 class (Standard, IA, Glacier, etc.) has its own $/GB and retrieval costs—match the class to access frequency.

4.2 Billing, Budgets & Cost Management

- **AWS Budgets** – Set spending or usage limits and get alerts when thresholds are reached.

- **AWS Cost Explorer** – Visualize and analyze past spend and forecast future costs.

- **AWS Billing Conductor** – Create custom billing reports for different teams or customers.

- **AWS Pricing Calculator** – Estimate costs of architectures before you deploy.

- **AWS Organizations** – Consolidated billing lets multiple accounts share discounts and simplify cost tracking.

- **Cost allocation tags** – Key–value tags (user-defined or AWS-generated) let you group and report costs by project, team, or environment.

- **AWS Cost and Usage Report (CUR)** – Most detailed CSV of all account usage for in-depth analysis.

4.3 AWS Technical Resources & Support Options

- **Documentation & guidance** – Whitepapers, blogs, and official docs on the AWS site; **AWS Prescriptive Guidance**, **Knowledge Center**, and **re:Post** community Q&A for best practices.

- **Support plans**

  - **Basic** – 24/7 customer service, documentation, re:Post.

  - **Developer** – Email support during business hours for dev/test.

  - **Business** – 24/7 phone/chat with engineers, Trusted Advisor full checks.

  - **Enterprise On-Ramp / Enterprise** – Dedicated Technical Account Manager (TAM), architecture reviews, proactive guidance.

- **Monitoring & optimization** –

  - **Trusted Advisor** – Cost optimization, security, and performance checks.

  - **AWS Health Dashboard & Health API** – Account-specific service health and maintenance alerts.

- **Trust & Safety team** – Report abuse or security incidents related to AWS resources.

- **AWS Partner Network (APN)** – Independent software vendors (ISVs) and system integrators that provide solutions, consulting, and marketplace products; benefits include training, certification, and partner discounts.

- **AWS Marketplace** – Curated third-party software with built-in billing, governance, and entitlement features.

- **Professional Services & Solutions Architects** – Hands-on technical help for complex migrations or designs.

▼ Technologies and concepts that might appear on the exam

Core Concepts

Service / Term	Quick Explanation	Keywords
APIs	Interfaces that let apps call AWS services programmatically.	programmatic access, SDK, CLI
Benefits of AWS Cloud	Pay only for what you use, scale on demand, global reach, built-in security.	pay-as-you-go, scalability, elasticity
AWS Cloud Adoption Framework (CAF)	Guides organizations through people, process, and technology changes for cloud migration.	migration guide, six perspectives
AWS Compliance	AWS maintains certifications (ISO, SOC, HIPAA) you can review via AWS Artifact.	audits, standards, Artifact
Compute	Resources that run workloads such as EC2, Lambda, containers.	servers, processing power
Cost Management	Tools to monitor and control AWS spending.	Budgets, Cost Explorer, Pricing Calculator
Databases	Managed relational (RDS/Aurora) and NoSQL (DynamoDB) services.	RDS, Aurora, DynamoDB
EC2 Instance Types	On-Demand (flexible), Reserved (long-term discount), Spot (spare capacity), Dedicated (single tenant).	pricing options
AWS Global Infrastructure	Regions, Availability Zones, and Edge locations that deliver AWS services worldwide.	Regions, AZs, edge
Infrastructure as Code (IaC)	Define resources in templates for repeatable deployments.	CloudFormation, CDK
AWS Knowledge Center	Official troubleshooting articles and FAQs.	support articles

Service / Term	Quick Explanation	Keywords
Machine Learning	Services for building and deploying AI/ML models.	SageMaker, Rekognition
Management & Governance	Monitor and manage AWS resources at scale.	CloudWatch, Config
Migration & Transfer	Move workloads/data into AWS using tools like DMS and Snowball.	DMS, Snow Family
Network Services	Build secure networks and routing.	VPC, Route 53, CloudFront
AWS Partner Network (APN)	Certified partners providing AWS consulting and products.	partners, ISV, SI
AWS Prescriptive Guidance	Step-by-step best practices for migrations or builds.	playbooks, blueprints
AWS Pricing Calculator	Estimate monthly AWS costs.	cost estimate
AWS Professional Services	AWS experts to help with complex projects.	consulting
AWS re:Post	Community Q&A platform for AWS topics.	Q&A, community
AWS SDKs	Language libraries to access AWS APIs.	Python boto3, Java SDK
Security	IAM, encryption, monitoring, and compliance tools.	IAM, KMS, Shield
AWS Security Blog / Center	Latest AWS security updates and guidance.	security news
Shared Responsibility Model	AWS secures the cloud infrastructure; customers secure what they deploy.	AWS "of" the cloud, customer "in" the cloud
AWS Solutions Architects	Experts who design cost-effective, reliable architectures.	architecture advice
Storage	Object (S3), block (EBS), file (EFS/FSx), archival (Glacier) options.	S3, EBS, Glacier
AWS Support Center / Plans	Portal and tiers (Basic to Enterprise) for technical help.	Support tickets

Service / Term	Quick Explanation	Keywords
Well-Architected Framework	5 pillars: Operational Excellence, Security, Reliability, Performance, Cost Optimization.	5 pillars

Key Services by Category

Analytics

Service	Explanation	Keywords
Athena	Run SQL queries directly on S3 data without servers.	serverless query, S3
Data Exchange	Share and subscribe to third-party datasets securely.	marketplace data
EMR	Managed Hadoop/Spark cluster for big data processing.	big data, Hadoop
Glue	ETL service with Data Catalog for analytics.	ETL, Data Catalog
Kinesis	Real-time data streaming and processing.	streams, real-time
MSK	Fully managed Apache Kafka clusters.	Kafka
OpenSearch	Search and analytics engine (formerly Elasticsearch).	full-text search
QuickSight	BI tool for dashboards and visual analytics.	business intelligence
Redshift	Data warehouse for large-scale SQL analytics.	data warehouse

Application Integration

Service	Explanation	Keywords
EventBridge	Event bus to route app events.	event bus
SNS	Publish/subscribe push notifications.	pub/sub
SQS	Message queue to decouple apps.	queue
Step Functions	Serverless workflow orchestrator.	state machine

Business Applications

Service	Explanation	Keywords
Connect	Cloud contact center.	call center
SES	Send bulk or transactional email.	email service

Cloud Financial Management

Service	Explanation	Keywords
Billing Conductor	Custom cost allocation and chargeback.	chargeback
Budgets	Set and track spending limits.	budget alerts
Cost & Usage Report	Detailed hourly billing data.	CUR
Cost Explorer	Visualize and analyze costs.	cost charts
Marketplace	Buy or sell pre-built AWS software.	third-party apps

Compute

Service	Explanation	Keywords
Batch	Run batch or HPC workloads.	batch jobs
EC2	Resizable virtual servers.	instances
Elastic Beanstalk	PaaS to deploy web apps quickly.	auto deploy
Lightsail	Simplified VPS for small apps.	simple VPS
Local Zones	AWS infra closer to end users for low latency.	metro edge
Outposts	AWS hardware on-premises.	on-prem AWS
Wavelength	5G edge compute with carriers.	mobile edge

Containers

Service	Explanation	Keywords
ECR	Container image repository.	docker registry
ECS	AWS native container orchestration.	containers
EKS	Managed Kubernetes service.	Kubernetes

Customer Engagement

Service	Explanation	Keywords
Activate	Credits and guidance for startups.	startup credits
AWS IQ	On-demand certified experts.	hire experts
Managed Services (AMS)	AWS manages operations for you.	fully managed ops
AWS Support	24/7 technical/customer support.	tech help

Databases

Service	Explanation	Keywords
Aurora	High-performance MySQL/PostgreSQL.	relational DB
DynamoDB	NoSQL key-value DB, millisecond latency.	NoSQL
MemoryDB	Redis-compatible in-memory DB.	Redis
Neptune	Graph database for relationships.	graph DB
RDS	Managed relational database service.	MySQL, Postgres

Developer Tools

Service	Explanation	Keywords
AppConfig	Safely roll out config changes.	config deploy
CLI / CloudShell	Command-line management tools.	terminal
Cloud9	Browser IDE for coding.	web IDE
CodeArtifact	Managed package repository.	package store
CodeBuild	Build/test code at scale.	build automation
CodeCommit	Private Git repositories.	Git service
CodeDeploy	Automated code deployment.	deploy
CodePipeline	CI/CD orchestration.	continuous delivery
CodeStar	Unified dev project management.	dev suite
X-Ray	Trace and debug distributed apps.	tracing

End User Computing

Service	Explanation	Keywords
AppStream 2.0	Stream desktop apps to browsers.	app streaming
WorkSpaces / Web	Cloud virtual desktops.	VDI

Frontend & Mobile

Service	Explanation	Keywords
Amplify	Build/host full-stack web or mobile apps.	hosting
AppSync	Managed GraphQL APIs.	GraphQL
Device Farm	Test apps on real devices.	device testing

IoT

Service	Explanation	Keywords
IoT Core	Secure device-to-cloud messaging.	MQTT
IoT Greengrass	Run AWS code on edge devices.	edge IoT

Machine Learning

Service	Explanation	Keywords
Comprehend	NLP text analysis (sentiment, entities).	NLP
Kendra	Intelligent enterprise search.	search
Lex	Conversational chatbot engine.	chatbot
Polly	Text-to-speech.	TTS
Rekognition	Image/video analysis.	face detect
SageMaker	Build/train/deploy ML models.	ML platform
Textract	Extract text from docs.	OCR
Transcribe	Speech-to-text.	transcription
Translate	Automatic language translation.	translation

Management & Governance

Service	Explanation	Keywords
Auto Scaling	Adjust capacity automatically.	elasticity
CloudFormation	IaC templates for stacks.	template deploy
CloudTrail	API call logs for auditing.	audit
CloudWatch	Metrics, logs, and alarms.	monitoring
Compute Optimizer	Right-size EC2/RDS resources.	cost optimize
Config	Resource inventory & compliance.	drift detect
Control Tower	Set up secure multi-account env.	landing zone
Health Dashboard	AWS service status info.	outages
Launch Wizard	Guided app deployments.	setup wizard
License Manager	Track software licenses.	license
Management Console	Web UI for all AWS services.	console
Organizations	Multi-account billing & policy.	consolidated billing
Resource Groups / Tag Editor	Organize & tag resources.	tags
Service Catalog	Pre-approved app stacks.	catalog
Systems Manager	Patch and manage fleets.	SSM
Trusted Advisor	Cost/security best-practice checks.	recommendations
Well-Architected Tool	Review vs 5-pillar framework.	architecture review

Migration & Transfer

Service	Explanation	Keywords
Application Discovery Service	Inventory on-prem workloads.	discovery
Application Migration Service	Lift-and-shift servers to AWS.	rehost
Database Migration Service (DMS)	Move databases with minimal downtime.	DB migrate

Service	Explanation	Keywords
Migration Hub	Track migration progress.	migration dashboard
Schema Conversion Tool (SCT)	Convert DB schema to new engines.	schema convert
Snow Family	Physical devices (Snowcone/Snowball) for large data transfer.	offline transfer
Transfer Family	Managed SFTP/FTP/FTPS service.	file transfer

Networking & Content Delivery

Service	Explanation	Keywords
API Gateway	Create & manage REST/HTTP APIs.	API endpoint
CloudFront	Global CDN caching for content.	CDN
Direct Connect	Dedicated private network link.	private fiber
Global Accelerator	Anycast IP for faster global access.	static IP
Route 53	DNS routing & domain registration.	DNS
VPC	Private virtual network.	subnets
VPN	Secure site-to-site or client tunnels.	IPSec

Security, Identity & Compliance

Service	Explanation	Keywords
Artifact	Download compliance reports/certs.	compliance docs
Audit Manager	Automate audit evidence collection.	audit
Certificate Manager (ACM)	Provision/manage SSL/TLS certs.	certificates
CloudHSM	Hardware key management.	HSM
Cognito	User authentication & federation.	user pool
Detective	Analyze security findings.	investigation
Directory Service	Managed Microsoft AD.	Active Directory
Firewall Manager	Centralize WAF/firewall rules.	firewall
GuardDuty	Threat detection via logs.	threat detect

Service	Explanation	Keywords
IAM	Create users, groups, roles, policies.	access control
IAM Identity Center (SSO)	Single sign-on for AWS apps.	SSO
Inspector	Automated vulnerability scanning.	scan
KMS	Create & control encryption keys.	encryption keys
Macie	Discover & protect sensitive data.	PII
Network Firewall	Managed network firewall.	layer-3/4 firewall
Resource Access Manager	Share resources across accounts.	cross-account
Secrets Manager	Store & rotate secrets safely.	credentials
Security Hub	Central security dashboard.	posture
Shield	Managed DDoS protection.	DDoS
WAF	Web Application Firewall for HTTP/S.	web firewall

Serverless

Service	Explanation	Keywords
Fargate	Run containers without managing servers.	serverless containers
Lambda	Run code on events, no servers.	event-driven

Storage

Service	Explanation	Keywords
Backup	Centralized, policy-based backups.	backup plan
EBS	Block storage for EC2 volumes.	persistent disk
EFS	Elastic NFS file system.	shared file
Elastic Disaster Recovery	Rapid failover for apps.	DR
FSx	Managed file systems (Windows, Lustre).	file share
S3	Scalable object storage.	buckets
S3 Glacier	Low-cost archival storage.	cold storage
Storage Gateway	Hybrid on-premises/cloud storage.	hybrid storage