What is CloudFront?

- **Amazon CloudFront** is a **Content Delivery Network (CDN)** service from AWS.
- It helps deliver **web content (images, videos, websites, apps, APIs)** to users **faster** by caching data in multiple locations worldwide.

What is a CDN (Content Delivery Network)?

- A **CDN** is a network of **servers distributed across the world**.
- Instead of always sending content from the **main server (origin)**, a CDN **stores copies (cache)** of the content in nearby locations called **edge locations**.
- This reduces **latency (delay)** and makes websites load faster.

How CloudFront Works

1. A user requests your website/image/video.
2. CloudFront checks if the content is already cached at the **nearest edge location**.
   - ✅ If yes → delivers directly (super fast).
   - ❌ If no → CloudFront fetches it from the **origin server** (like S3, EC2, or your own server), stores it at the edge, and then delivers it.
3. Next user nearby will get the cached copy instantly.

Benefits of CloudFront as CDN

- **Faster content delivery** → Users get data from the nearest location.
- **Scalability** → Can handle millions of requests easily.
- **Security** → Works with AWS WAF (firewall), SSL/TLS encryption, and DDoS protection.
- **Cost-effective** → Reduces load on origin servers.
- **Global Reach** → Many AWS edge locations worldwide.

Example

- Suppose your website is hosted in **Mumbai (India)**.
- A user from **USA** visits your site:
   - Without CloudFront → request goes all the way to Mumbai → **slow**.
   - With CloudFront → request is served from the **nearest edge location (say, New York) → fast**.