AWS ALB (Application Load Balancer) is a service provided by Amazon Web Services (AWS) that allows you to distribute incoming application traffic across multiple targets, such as EC2 instances, containers, and IP addresses. It operates at the application layer (Layer 7) of the OSI model and supports HTTP, HTTPS, and WebSocket protocols.

Here are some key features and functionalities of AWS ALB:

1. Layer 7 Load Balancing: ALB intelligently routes traffic based on the content of the requests, making it suitable for applications that require more advanced load balancing decisions.
2. Target Groups: ALB forwards incoming requests to a target group, which can include one or more instances, containers, or IP addresses that serve the application.
3. Routing Rules: You can configure various routing rules based on path patterns, host headers, query strings, and other request attributes to direct traffic to different target groups.
4. Health Checks: ALB performs health checks on the targets within a target group to ensure that they are healthy and able to handle requests.
5. SSL/TLS Termination: ALB can handle SSL/TLS termination, relieving backend instances of the encryption and decryption process.
6. Sticky Sessions: ALB supports sticky sessions, allowing the same client to be routed consistently to the same target during its session.
7. Content-Based Routing: ALB can route traffic based on the content of the request, enabling more sophisticated traffic management scenarios.
8. Integration with Other AWS Services: ALB can easily integrate with various AWS services like AWS Certificate Manager, AWS Identity and Access Management (IAM), and AWS Elastic Container Service (ECS), making it a crucial component in many AWS-based architectures.
9. Security: ALB provides various security features such as SSL certificates, security groups, and the ability to configure access control rules using IAM.
10. Monitoring and Logging: ALB provides access logs that record detailed information about each request and also integrates with AWS CloudWatch for monitoring and metrics.

AWS ALB complements the Classic Load Balancer (CLB) and Network Load Balancer (NLB) by providing more advanced features for modern application architectures. It is commonly used for web applications, microservices, and container-based deployments. ALB can be easily managed and configured through the AWS Management Console, CLI (Command Line Interface), and SDKs (Software Development Kits).