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Q: How do I decide which load balancer to select for my application?

Elastic Load Balancing supports three types of load balancers. You can select the appropriate load balancer based on your application needs. If you need flexible application management and TLS termination then we recommend you to use Application Load Balancer. If extreme performance and static IP is needed for your application then we recommend you to use Network Load Balancer. If your application is built within the EC2 Classic network then you should use Classic Load Balancer.

Q: Can I privately access Elastic Load Balancing APIs from my Amazon Virtual Private Cloud (VPC) without using public IPs?

Yes, you can privately access Elastic Load Balancing APIs from your Amazon Virtual Private Cloud (VPC) by creating [VPC Endpoints](#). With VPC Endpoints, the routing between the VPC and Elastic Load Balancing APIs is handled by the AWS network without the need for an Internet gateway, NAT gateway, or VPN connection. The latest generation of VPC Endpoints used by Elastic Load Balancing are powered by [AWS PrivateLink](#), an AWS technology enabling the private connectivity between AWS services using Elastic Network Interfaces (ENI) with private IPs in your VPCs. To learn more about AWS PrivateLink, visit the [AWS PrivateLink documentation](#).

Application Load Balancer

Q: Which operating systems does an Application Load Balancer support?

An Application Load Balancer supports targets with any operating system currently supported by the Amazon EC2 service.



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Yes. WebSockets and Secure WebSockets support is available natively and ready for use on an Application Load Balancer.

Q: Is Request tracing supported on an Application Load Balancer?

Yes. Request tracing is enabled by default on your Application Load Balancer.

Q: Will my existing load balancers (Classic Load Balancers) have the same features and benefits of an Application Load Balancer?

While there is some overlap, we do not plan to maintain feature parity between the two types of load balancers. Application Load Balancers are the foundation of our application layer load-balancing platform for the future.

Q: Can I configure my Amazon EC2 instances to accept traffic only from my Application Load Balancers?

Yes.

Q: Can I configure a security group for the front-end of an Application Load Balancer?

Yes.

Q: Can I use the existing APIs that I use with my Classic Load Balancer with an Application Load Balancer?

No. Application Load Balancers require a new set of APIs.

Q: How do I manage both Application and Classic Load Balancers simultaneously?

The ELB Console will allow you to manage Application and Classic Load Balancers from the same interface. If you are using the CLI or an SDK, you will use a different 'service' for Application Load



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Q: Can I use a single Application Load Balancer for handling HTTP and HTTPS requests?

Yes, you can add listeners for HTTP port 80 and HTTPS port 443 to a single Application Load Balancer.

Q: Can I get a history of Application Load Balancing API calls made on my account for security analysis and operational troubleshooting purposes?

Yes. To receive a history of Application Load Balancing API calls made on your account, use [AWS CloudTrail](#).

Q: Does an Application Load Balancer support HTTPS termination?

Yes, you can terminate HTTPS connection on the Application Load Balancer. You must install an SSL certificate on your load balancer. The load balancer uses this certificate to terminate the connection and then decrypt requests from clients before sending them to targets.

Q: What are the steps to get a SSL certificate?

You can either use [AWS Certificate Manager](#) to provision an SSL/TLS certificate or you can obtain the certificate from other sources by creating the certificate request, getting the certificate request signed by a CA, and then uploading the certificate either using AWS Certification Manager or the [AWS Identity and Access Management \(IAM\) service](#).

Q: How does an Application Load Balancer integrate with AWS Certificate Manager (ACM)?

An Application Load Balancer is integrated with AWS Certificate Management (ACM). Integration with ACM makes it very simple to bind a certificate to the load balancer thereby making the entire SSL offload process very easy. Purchasing, uploading, and renewing SSL/TLS certificates is a time-consuming manual and complex process. With ACM integration with Application Load Balancer, this



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you can associate

- (a) ECDSA and RSA certificates
- (b) Certificates with different key sizes (e.g. 2K and 4K) for SSL/TLS certificates
- (c) Single-Domain, Multi-Domain (SAN) and Wildcard certificates

Q: Is IPv6 supported with an Application Load Balancer?

Yes, IPv6 is supported with an Application Load Balancer.

Q: How do you set up rules on an Application Load Balancer?

You can configure rules for each of your listeners you configure for the load balancer. The rules include a condition and a corresponding action if the condition is satisfied. The condition will be a path URL path of a service (e.g. /img) and action is forward. Once you have set this up, the load balancer will use the rules to determine the service to which the request must be routed.

Q: Are there limits on the resources for an Application Load Balancer?

Your AWS account has [these](#) limits for an Application Load Balancer.

Q. How can I protect my web applications behind a load balancer from web attacks?

You can integrate your Application Load Balancer with AWS WAF, a web application firewall that helps protect web applications from attacks by allowing you to configure rules based on IP addresses, HTTP headers, and custom URI strings. Using these rules, AWS WAF can block, allow, or monitor (count) web requests for your web application. Please see [AWS WAF Developer Guide](#) for more information.

Q: Can I load balance to any arbitrary IP address?



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target group and the on-premises targets in another target group and use content based routing to route traffic to each target group. You can also use separate load balancers for VPC and on-premises targets and use DNS weighting to achieve weighted load balancing between VPC and on-premises targets.

Q: How can I load balance to EC2-Classic instances?

You cannot load balance to EC2-Classic Instances when registering their Instance IDs as targets. However if you link these EC2-Classic instances to the load balancer's VPC using ClassicLink and use the private IPs of these EC2-Classic instances as targets, then you can load balance to the EC2-Classic instances. If you are using EC2 Classic instances today with a Classic Load Balancer, you can easily migrate to an Application Load Balancer.

Q: How do I enable cross-zone load balancing in Application Load Balancer?

Cross-zone load balancing is already enabled by default in Application Load Balancer.

Q: When should I authenticate users using the Application Load Balancer's integration with Amazon Cognito vs. the Application Load Balancers' native support for OpenID Connect (IODC) identity providers (IdPs)?

You should use authentication through Amazon Cognito if:

- a. You want to provide flexibility to your users to authenticate via social network identities (Google, Facebook, and Amazon) or enterprise identities (SAML) or via your own user directories provided by Amazon Cognito's User Pool.
- b. You are managing multiple identity providers including OpenID Connect and want to create a single authentication rule in ALB, that can use Amazon Cognito to federate your multiple identity providers.



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HTTP to HTTP	http://hostA to http://hostB
HTTP to HTTPS	http://hostA to https://hostB https://hostA:portA/pathA to https://hostB:portB/pathB
HTTPS to HTTPS	https://hostA to https://hostB

Q: What content types does ALB support for the message body of fixed-response action?

The following content types are supported: text/plain, text/css, text/html, application/javascript, application/json.

Application Load Balancer Pricing FAQs

Q: How does Application Load Balancer pricing work?

You are charged for each hour or partial hour that an Application Load Balancer is running and the number of Load Balancer Capacity Units (LCU) used per hour.

Q: What is a Load Balancer Capacity Unit (LCU)?

An LCU is a new metric for determining how you pay for an Application Load Balancer. An LCU defines the maximum resource consumed in any one of the dimensions (new connections, active connections, bandwidth and rule evaluations) the Application Load Balancer processes your traffic.

Q: Will I be billed on Classic Load Balancers by LCU?

No, Classic Load Balancers will continue to be billed for bandwidth and hourly usage.

Q: How do I know the number of LCUs an Application Load Balancer is using?



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Q: Can I use a combination of Application Load Balancer and Classic Load Balancer as part of my free tier?

Yes. You can use both Classic and Application Load Balancers for 15GB and 15 LCUs respectively. The 750 load balancer hours are shared between both Classic and Application Load Balancers.

Q: What are rule evaluations?

Rule evaluations are defined as the product of number of rules processed and the request rate averaged over an hour.

Q: How does the LCU billing work with different certificate types and key sizes?

Certificate key size affects only the number of new connections per second in the LCU computation for billing.

The following table lists the value of this dimension for different key sizes for RSA and ECDSA certificates.

RSA certificates

Key Size	<=2K	<=4K	<=8K	>8K
New connections/sec	25	5	1	0.25

ECDSA Certificates

Key Size	<=256	<=384	<=521	>521
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Q: Can I create a TCP (Layer 4) listener for my Network Load Balancer?

Yes. Network Load Balancers support only TCP (Layer 4) listeners.

Q: What are the key features available with the Network Load Balancer?

Network Load Balancer provides TCP (Layer 4) load balancing. It is architected to handle millions of requests/sec, sudden volatile traffic patterns and provides extremely low latencies. In addition Network Load Balancer also preserves the source IP of the clients, provides stable IP support and Zonal isolation. It also supports long-running connections that are very useful for WebSocket type applications.

Q: How does Network Load Balancer compare to what I get with the TCP listener on a Classic Load Balancer?

Network Load Balancer preserves the source IP of the client which in the Classic Load Balancer is not preserved. Customers can use proxy protocol with Classic Load Balancer to get the source IP. Network Load Balancer automatically provides a static IP per Availability Zone to the load balancer and also enables assigning an Elastic IP to the load balancer per Availability Zone. This is not supported with Classic Load Balancer. Classic Load Balancer provides SSL termination that is not available with Network Load Balancer.

Q: Can I migrate to Network Load Balancer from Classic Load Balancer?

Yes. You can migrate to Network Load Balancer from Classic Load Balancer using one of the options listed in [this document](#).

Q: Are there limits on the resources for my Network Load Balancer?

Yes, please refer to [Network Load Balancer limits documentation](#) for more information.



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Q: Does Network Load Balancer support DNS regional and zonal fail-over?

Yes, you can use Amazon Route 53 health checking and DNS failover features to enhance the availability of the applications running behind Network Load Balancers. Using Route 53 DNS failover, you can run applications in multiple AWS Availability zones and designate alternate load balancers for failover across regions. In the event that you have your Network Load Balancer configured for multi-AZ, if there are no healthy EC2 instances registered with the load balancer for that Availability Zone or if the load balancer nodes in a given zone are unhealthy, then R-53 will fail away to alternate load balancer nodes in other healthy availability zones.

Q: Can I have a Network Load Balancer with a mix of ELB-provided IPs and Elastic IPs or assigned private IPs?

No. A Network Load Balancer's addresses must be completely controlled by you, or completely controlled by ELB. This is to ensure that when using Elastic IPs with a Network Load Balancer, all addresses known to your clients do not change.

Q: Can I assign more than one EIP to my Network Load Balancer in each subnet?

No. For each associated subnet that a Network Load Balancer is in, the Network Load Balancer can only support a single public/internet facing IP address

Q: If I remove/delete a Network Load Balancer what will happen to the Elastic IP addresses that were associated with it?

The Elastic IP Addresses that were associated with your load balancer will be returned to your allocated pool and made available for future use.

Q: Does Network Load Balancer support internal load balancers?



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Q: Can I load balance to any arbitrary IP address?

You can use any IP address from the load balancer's VPC CIDR for targets within load balancer's VPC and any IP address from RFC 1918 ranges (10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16) or RFC 6598 range (100.64.0.0/10) for targets located outside the load balancer's VPC (EC2-Classic and on-premises locations reachable over AWS Direct Connect).

Q: What benefit will I get by targeting containers behind a load balancer with IP addresses instead of instance IDs?

Each container on an instance can now have its own security group and does not need to share security rules with other containers. You can attach security groups to an ENI and each ENI on an instance can have a different security group. You can map a container to the IP address of a particular ENI to associate security group(s) per container. Load balancing using IP addresses also allows multiple containers running on an instance use the same port (say port 80). The ability to use the same port across containers allows containers on an instance to communicate with each other through well-known ports instead of random ports.

Q: How can I load balance applications distributed across a VPC and on-premises location?

There are various ways to achieve hybrid load balancing. If an application runs on targets distributed between a VPC and an on-premises location, you can add them to the same target group using their IP addresses. To migrate to AWS without impacting your application, gradually add VPC targets to the target group and remove on-premises targets from the target group. You can also use separate load balancers for VPC and on-premises targets and use DNS weighting to achieve weighted load balancing between VPC and on-premises targets.

Q: How can I load balance to EC2-Classic instances?



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Yes, you will be charged for regional data transfer between Availability Zones with Network Load Balancer when cross-zone load balancing is enabled. Check the charges in the data-transfer section at [Amazon EC2 On-Demand Pricing page](#).

Q: Is there any impact of cross-zone load balancing on Network Load Balancer limits?

Yes. Network Load Balancer currently supports 200 targets per Availability Zone. For example, if you are in 2 Availability-Zones, you can have up to 400 targets registered with Network Load Balancer. If cross-zone load balancing is on, then the maximum targets reduces from 200 per Availability Zone to 200 per load balancer. So, in the example above when cross-zone load balancing is on, even though your load balancer is in 2 Availability Zones, you are limited to 200 targets that can be registered to the load balancer.

Network Load Balancer Pricing FAQs

Q:How does Network Load Balancer pricing work?

You are charged for each hour or partial hour that a Network Load Balancer is running and the number of Load Balancer Capacity Units (LCU) used by Network Load Balancer per hour.

Q: What is a Load Balancer Capacity Unit (LCU)?

An LCU is a new metric for determining how you pay for a Network Load Balancer. An LCU defines the maximum resource consumed in any one of the dimensions (new connections/flows, active connections/flows, and bandwidth) the Network Load Balancer processes your traffic.

Q: Is new connections/flows per sec same as requests/sec?

No. Multiple requests can be sent in a single connection.



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Q: Is a free tier offered on a Network Load Balancer for new AWS accounts?

Yes. For new AWS accounts, a free tier for a Network Load Balancer offers 750 hours and 15 LCUs. This free tier offer is only available to new AWS customers, and is available for 12 months following your AWS sign-up date.

Q: Can I use a combination of Network Load Balancer, Application Load Balancer and Classic Load Balancer as part of my free tier?

Yes. You can use Application and Network each for 15 LCUs and Classic for 15 GB respectively. The 750 load balancer hours are shared between Application, Network and Classic Load Balancers.

Classic Load Balancer

Q: Which operating systems does the Classic Load Balancer support?

The Classic Load Balancer supports Amazon EC2 instances with any operating system currently supported by the Amazon EC2 service.

Q: Which protocols does the Classic Load Balancer support?

The Classic Load Balancer supports load balancing of applications using HTTP, HTTPS (Secure HTTP), SSL (Secure TCP) and TCP protocols.

Q: What TCP ports can I load balance?

You can perform load balancing for the following TCP ports:

- [EC2-VPC] 1-65535
- [EC2-Classic] 25, 80, 443, 465, 587, 1024-65535



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Q: Can I use a single Classic Load Balancer for handling HTTP and HTTPS requests?

Yes, you can map HTTP port 80 and HTTPS port 443 to a single Classic Load Balancer.

Q: How many connections will my load balanced Amazon EC2 instances need to accept from each Classic Load Balancer?

Classic Load Balancers do not cap the number of connections that they can attempt to establish with your load balanced Amazon EC2 instances. You can expect this number to scale with the number of concurrent HTTP, HTTPS, or SSL requests or the number of concurrent TCP connections that the Classic load balancers receive.

Q: Can I load balance Amazon EC2 instances launched using a Paid AMI?

You can load balance Amazon EC2 instances launched using a paid AMI from [AWS Marketplace](#). However, Classic Load Balancers do not support instances launched using a paid AMI from [Amazon DevPay](#) site.

Q: Can I use Classic Load Balancers in Amazon Virtual Private Cloud?

Yes -- see the [Elastic Load Balancing](#) web page.

Q: Can I get a history of Classic Load Balancer API calls made on my account for security analysis and operational troubleshooting purposes?

Yes. To receive a history of Classic Load Balancer API calls made on your account, simply turn on CloudTrail in the AWS Management Console.

Q: Do Classic Load Balancers support SSL termination?



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SSL offload process very easy. Typically purchasing, uploading, and renewing SSL/TLS certificates is a time-consuming manual and complex process. With ACM integrated with Classic Load Balancers, this whole process has been shortened to simply requesting a trusted SSL/TLS certificate and selecting the ACM certificate to provision it with each load balancer.

Q: How do I enable cross-zone load balancing in Classic Load Balancer?

You can enable cross-zone load balancing using the console, the AWS CLI, or an AWS SDK. See [Cross-Zone Load Balancing documentation](#) for more details.

Q: Am I charged for regional AWS data-transfer when I enable cross-zone load balancing in Classic Load Balancer?

No, you are not charged for regional data transfer between Availability Zones when you enable cross-zone load balancing for your Classic Load Balancer.



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