# Preserving client IP address in any TCP session

When you use a reverse proxy like the F5 BIG-IP is, there's always a big discussion how to preserving the client ip address in any TCP session.

F5 has a document describing the different possibilities:

- If the traffic is HTTP,  you can use x-forwarded-for feature.

  **Note:** For more information refer to: K4816: Using the X-Forwarded-For HTTP header to preserve the original client IP address for traffic translated by a SNAT object
- Preserving the client IP in layer 4 or layer 3.
  **Note:** There is no option can be configured in the virtual server without disabling the SNAT. This is by design as BIG-IP acts a full-proxy in most cases.
- Disabling SNAT is an option, which means no Address Translation occurs.
  **Note:** You must ensure that servers will **use F5 as the default gateway** for replying back to the client, in order to prevent asymmetric routing.
- If you are open to complex solution, you may use TCP Options to insert the client-IP into the TCP Header Options field.
  **Note:** Configuring the BIG-IP to insert into the TCP header of a connection can be a complicated implementation can be found in DevCentral, or F5 professional services.

  For more information refer to: DevCentral: Accessing TCP Options from iRules

You can finde the document here:

K12757773: Preserving client IP address in any TCP session

## Another possible solution to the problem

You can use the Proxy Protocol to preserve a client's IP address when that client's connection passes through a proxy.

What is the Proxy Protocol? It is a network protocol for preserving a client's IP address when the client's TCP connection passes through a proxy. Without such a mechanism, proxies lose this information because they act as a surrogate for the client, relaying messages to the server but replacing the client's IP address with their own. This distorts the logs of upstream servers because the logs incorrectly indicate that all traffic originated at the proxy.

See here: https://www.haproxy.com/blog/use-the-proxy-protocol-to-preserve-a-clients-ip-address

This protocol is often used in Kubernetes clusters for preserving the source-ip address. In this case an external load balancer talks to the ingress controller with proxy protocol.

Link: https://kubernetes.io/docs/tutorials/services/source-ip/

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