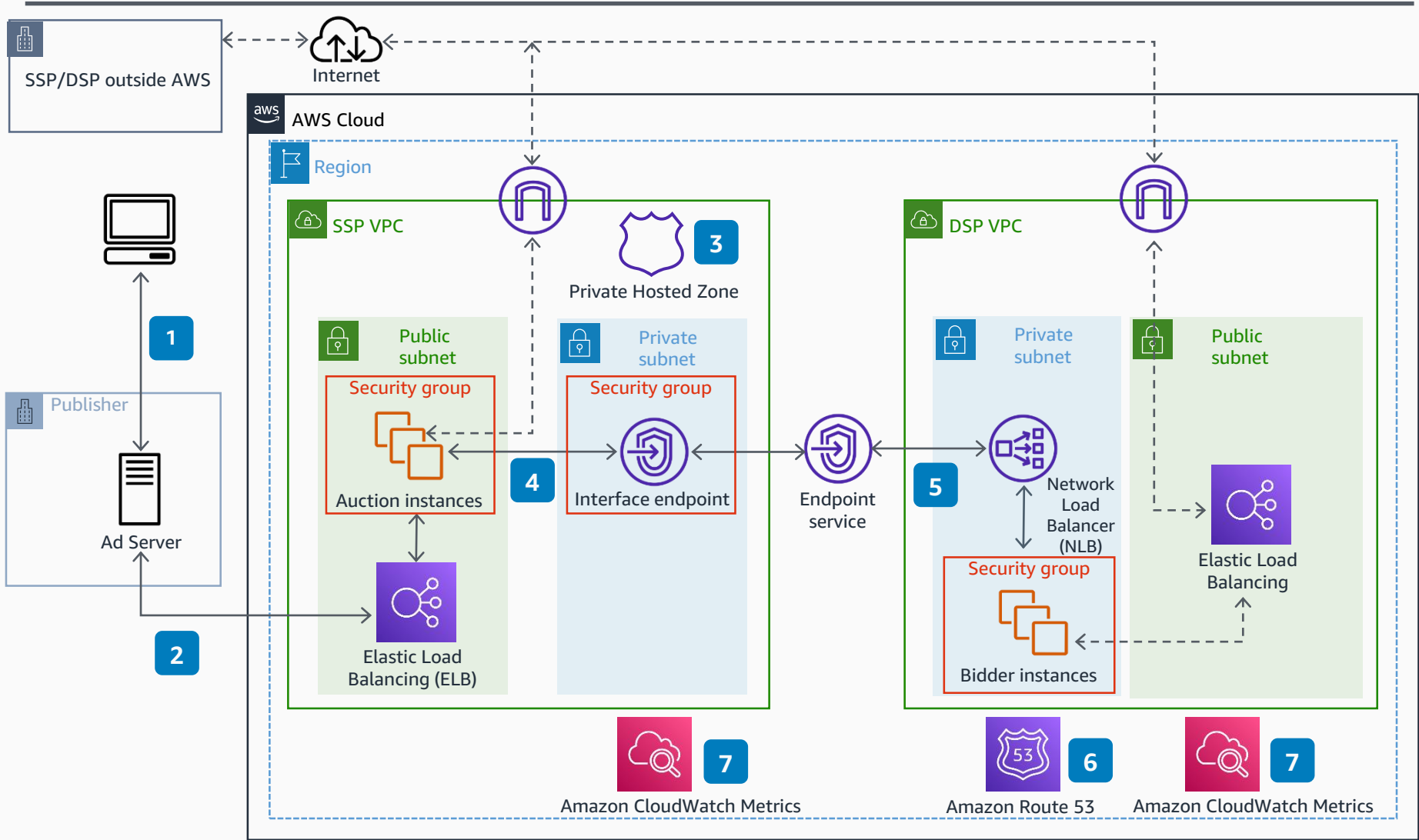# Guidance for AdTech Private Network on AWS

This architecture diagram is designed for publishers of ad-supported websites. It enables supply side platforms (SSPs) and demand side platforms (DSPs) to deploy their programmatic bidding application in the same AWS Region to create a private connection using AWS PrivateLink services to route real-time bidding (RTB) traffic in a highly scalable, secure, and cost-optimized design.

SSP/DSP outside AWS

Internet

AWS Cloud

Region

SSP VPC

Private Hosted Zone **3**

Public subnet

Security group

Auction instances

Private subnet

Security group

Interface endpoint **4**

Endpoint service

DSP VPC

Private subnet

Network Load Balancer (NLB) **5**

Security group

Bidder instances

Public subnet

Security group

Elastic Load Balancing

Publisher

Ad Server **1**

2

Elastic Load Balancing (ELB)

Amazon CloudWatch Metrics **7**

Amazon Route 53 **6**

Amazon CloudWatch Metrics **7**

1 When a reader accesses a webpage with an ad impression, an ad request is sent to the Publisher Ad Server.

2 The Publisher Ad Server processes the request and sends it to the endpoint URL provided by the supply-side platform (SSP) to fill the ad impression. The **Elastic Load Balancer (ELB)** on the SSP's virtual private cloud (VPC) forwards the request to the Auction Server, which sends out a bid request to endpoint web address (URL) of participating demand-side platforms.

3 The SSP VPC does a DNS lookup with the VPC DNS or the Private Hosted Zone and routes the request either through the interface endpoint or out to the internet.

4 If the DSP is set up with **AWS PrivateLink**, the bid request is then routed to the endpoint Elastic Network Interface (ENI) in the SSP's private subnet. The request is then forwarded to the endpoint service on DSP side.

5 The endpoint service then routes the bid request to associated **Network Load Balancer (NLB)**, which load balances the bid request to the Bidder fleet. The Bidder instance will process the request and return a bid response back to the SSP Auction Server. All the requests and responses are routed through the AWS network.

6 In order for demand side platforms (DSPs) to use a private hostname for their endpoint URL, the DSP should verify the domain by creating a TXT record on their DNS. This architecture assumes that DSP uses **Amazon Route 53** for DNS.

7 Both the SSP and the DSP can set up **Amazon CloudWatch** dashboards to gain visibility into active connections and bytes processed per endpoint.

AWS Reference Architecture