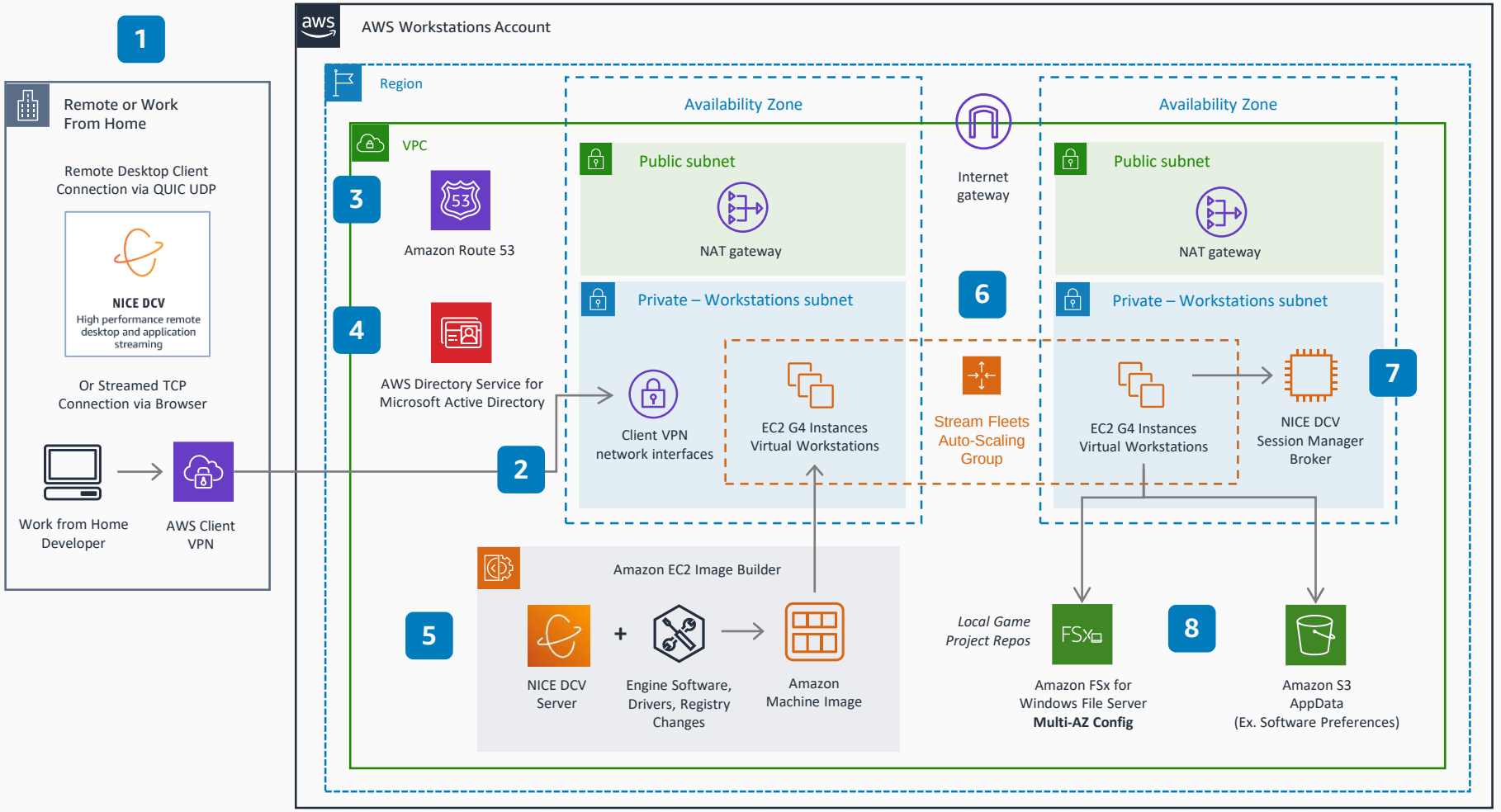
Game Production in the Cloud – Workstations

Stream Game Development from anywhere with NICE DCV

This architecture, which is agnostic of game engine and software, walks through the use of streaming remote workstations with the NICE DCV protocol. It covers the high level considerations for use of cloud development workstations for games.



1. NICE DCV is a streaming protocol that supports 4K, 60 FPS streaming. Developers using a browser connect via TCP connections whereas desktop clients can use QUIC UDP over port 8443 for increased performance.
2. Developers use **AWS Client VPN** for a secure connection to network interfaces in the workstations subnets with source network address translation (SNAT).
3. **Amazon Route 53** provides private DNS for the resources in the VPC as well as inbound and outbound DNS forwarding.
4. **AWS Directory Service** provides managed **AWS Directory Service for Microsoft Active Directory** to enable local game project storage mapped to individual users.
5. Workstations are created using an **Amazon Machine Image (AMI)** built with **EC2 Image Builder**. Images include NICE DCV server, developer software, registry changes, and drivers (such as NVIDIA gaming drivers or peripheral drivers). **AWS Marketplace** includes common AMIs used for workstations.
6. Fleets of workstations use graphics **Amazon Elastic Compute Cloud (Amazon EC2)** instance types that provide GPUs and are scaled using EC2 Auto Scaling Groups.
7. A Session Manager Broker enables management of NICE DCV sessions.
8. Local file storage of projects are hosted in **Amazon FSx for Windows File Server**. Developers commit to a separate continuous integration and continuous delivery (CI/CD) pipeline by pushing from local storage to source control.

Reviewed for technical accuracy December 1, 2021

AWS Reference Architecture