



Service Definition Document

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Introduction

DCV is a high-performance remote display protocol that enables secure delivery of remote desktops and application streaming from any cloud or data center to virtually any device. It is designed for graphics-intensive workloads and high-performance computing (HPC) environments, allowing users to access powerful virtual desktops without the need for expensive local workstations.

Product Description

Overview

DCV provides a secure and efficient way to stream the visual output of applications hosted on remote servers to client devices. By leveraging Amazon EC2 instances, users can run demanding applications and visualize results remotely, reducing infrastructure costs and improving flexibility. The protocol is widely used in HPC, CAD, simulation, and 3D visualization scenarios.

Key Benefits

- **High Performance:** Bandwidth-adaptive streaming ensures near real-time responsiveness without compromising image quality.
- **Cost Optimization:** Eliminates the need for dedicated workstations and supports GPU sharing on Linux servers.
- **Flexible Deployment:** Compatible with Windows, Linux, and macOS, with native and browser-based clients.
- **Comprehensive Security:** Streams pixels instead of geometry for data privacy and uses TLS encryption for secure transmission.

Core Features

- Full remote desktop sharing using the DCV protocol.
- H.264-based video compression for efficient bandwidth usage.
- Lossless video compression when conditions allow.
- Multi-monitor support and automatic display layout adaptation.
- USB device redirection, smart card support, and multi-channel audio.
- Native clients for Windows, Linux, macOS, and HTML5 browser access.
- Session Manager for programmatic session lifecycle management.
- SDK for building custom web clients

Architecture

DCV consists of:

- **DCV Server:** Installed on an EC2 instance or on-premises server, responsible for rendering and compressing visual output.
- **DCV Client:** Installed on user devices or accessed via browser, decrypts and displays the pixel stream.
- **Secure Protocol:** Uses TLS encryption for all data streams.
- **Recommended EC2 instance types** include GPU-enabled families such as G4dn, G5, and G6 for optimal performance.

Use Cases

- **HPC Visualization:** Scientific simulations and engineering analysis.
- **CAD and Design:** Remote access to 3D modeling applications.
- **Media and Entertainment:** Rendering and animation workflows.
- **Training and Education:** Virtual labs and remote learning environments.

Documentation

Comprehensive documentation is available through AWS, including Administrator Guides, User Guides, and SDK references for developers.