



Web Client SDK Developer Guide

# Amazon DCV



# Amazon DCV: Web Client SDK Developer Guide

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# What is the Amazon DCV Web Client SDK?

## Note

Amazon DCV was previously known as NICE DCV.

Amazon DCV is a high-performance remote display protocol. It lets you securely deliver remote desktops and application streaming from any cloud or data center to any device, over varying network conditions. By using Amazon DCV with Amazon EC2, you can run graphics-intensive applications remotely on Amazon EC2 instances. You can then stream the results to more modest client machines, which eliminates the need for expensive dedicated workstations.

The Amazon DCV Web Client SDK is a JavaScript library that you can use to develop your own Amazon DCV web browser client applications. Your end users can use these applications to connect to and interact with a running Amazon DCV session.

Using the Amazon DCV Web Client SDK as a building block, you can build customized web applications that provide users with instant access to their desktop or applications from anywhere, with a responsive and fluid performance that is almost indistinguishable from a natively installed application.

This guide explains how to use the Amazon DCV Web Client SDK to build your custom web browser client applications to interact with Amazon DCV sessions within your workflows.

## Topics

- [Prerequisites](#)
- [Supported features](#)
- [Browser support](#)
- [Versioning convention](#)

## Prerequisites

Before you start working with the Amazon DCV Web Client SDK, ensure that you're familiar with Amazon DCV and Amazon DCV sessions. For more information, see the [Amazon DCV Administrator Guide](#).

The Amazon DCV Web Client SDK supports Amazon DCV server version 2020 and later.

## Supported features

You can build custom web browser client applications that support the following Amazon DCV features:

- Connect to Windows Amazon DCV servers
- Connect to Linux Amazon DCV servers
- Manage streaming modes
- Transfer files
- Print from sessions
- Copy and paste
- Stereo 2.0 audio playback
- Stereo 2.0 audio recording (on Windows servers)
- Touchscreen
- Stylus (on Linux, Windows 10, and Windows Server 2019 servers)
- Multiple monitor support

For more information about these features, see [Supported features](#) in the *Amazon DCV User Guide*.

## Browser support

The Amazon DCV Web Client SDK supports JavaScript (ES6) and it can be used from JavaScript or TypeScript applications.

The Amazon DCV Web Client SDK supports the following web browsers:

Browser	Version
Google Chrome	Latest three major versions
Mozilla Firefox	Latest three major versions
Microsoft Edge	Latest three major versions

Browser	Version
Apple Safari for macOS	Latest three major versions

## Versioning convention

The Amazon DCV Web Client SDK version is defined in the following format:

*major.minor.patch*. The versioning convention generally adheres to the [semantic versioning model](#). A change in the major version, such as from 1.x.x to 2.x.x, indicates that breaking changes that might require code changes and a planned deployment have been introduced. A change in the minor version, such as from 1.1.x to 1.2.x, is backwards compatible, but might include deprecated elements.

# Getting started with the Amazon DCV Web Client SDK

The Amazon DCV Web Client SDK comprises of a main `dcv.js` file and some auxiliary components. All the files are distributed inside a compressed archive that can be downloaded from the [Amazon DCV website](#).

## To get started with the Amazon DCV Web Client SDK

1. The Amazon DCV Web Client SDK archive is digitally signed with a secure GPG signature. To verify the archive's signature, you must import the NICE GPG key. To do so, open a terminal window and import the NICE GPG key.

```
$ wget https://d1uj6qtbmh3dt5.cloudfront.net/NICE-GPG-KEY
```

```
$ gpg --import NICE-GPG-KEY
```

2. Download the **Amazon DCV Web Client SDK archive** and the **Amazon DCV Web Client SDK archive signature** from the [Amazon DCV website](#).
3. Verify the signature of the Amazon DCV Web Client SDK archive using the signature.

```
$ gpg --verify  
signature_filename.zip.sign  
archive_filename.zip
```

For example:

```
$ gpg --verify nice-dcv-web-client-sdk-1.8.7-858.zip.sign nice-dcv-web-client-  
sdk-1.8.7-858.zip
```

4. If the signature verifies successfully, extract the contents of the Amazon DCV Web Client SDK archive and place the extracted directory on your web server. For example:

```
$ unzip  
archive_filename.zip  
-d /  
path_to
```



```
/
  server_directory
/
```

### Important

- You must retain the folder structure when deploying the Amazon DCV Web Client SDK on your web server.
- When using Amazon DCV Web UI SDK, please beware that the `DCVViewer` React component expects the `EULA.txt` and `third-party-licenses.txt` files from this package to be present in the URL path for the embedded web server. The `third-party-licenses.txt` file should be modified to also include the content of the corresponding file from Amazon DCV Web Client SDK package and possibly any other license information from the libraries used by the consuming user application.

## Connect to a Amazon DCV server and get the first frame

The following tutorial shows you how to prepare your HTML page for your custom web client, how to authenticate and connect to a Amazon DCV server, and how to receive the first frame of streamed content from the Amazon DCV session.

### Topics

- [Step 1: Prepare your HTML page](#)
- [Step 2: Authenticate, connect, and get the first frame](#)
- [Bonus: Automatically create an HTML login form](#)

### Step 1: Prepare your HTML page

In your web page, you must load the needed JavaScript modules and you must add a `<div>` HTML element with a valid `id` where you want the Amazon DCV Web Client SDK to draw the content stream from the remote Amazon DCV server.

For example:

```
<!DOCTYPE html>
```

```
<html lang="en" style="height: 100%;">
  <head>
    <title>DCV first connection</title>
  </head>
  <body style="height: 100%;">
    <div id="root" style="height: 100%;"></div>
    <div id="dcv-display"></div>
    <script type="module" src="index.js"></script>
  </body>
</html>
```

## Step 2: Authenticate, connect, and get the first frame

This section shows how to complete the user authentication process, how to connect the Amazon DCV server, and how to receive the first frame of content from the Amazon DCV server.

First, from the `index.js` file import the Amazon DCV Web Client SDK. It can be imported either as a Universal Module Definition (UMD) module, like so:

```
import "../dcvjs/dcv.js"
```

Otherwise, starting from version `1.1.0`, it can also be imported as a ECMAScript Module (ESM) from the corresponding package, like so:

```
import dcv from "../dcvjs/dcv.js"
```

Define the variables to use to store the Authentication object, Connection object, and the Amazon DCV server URL.

```
let auth,
    connection,
    serverUrl;
```

On script load, log the Amazon DCV Web Client SDK version, and on page load, call the `main` function.

```
console.log("Using Amazon DCV Web Client SDK version " + dcv.version.versionStr);
document.addEventListener('DOMContentLoaded', main);
```

The `main` function sets the log level and starts the authentication process.

```
function main () {
  console.log("Setting log level to INFO");
  dcv.setLogLevel(dcv.LogLevel.INFO);

  serverUrl = "https://your-dcv-server-url:port/";

  console.log("Starting authentication with", serverUrl);

  auth = dcv.authenticate(
    serverUrl,
    {
      promptCredentials: onPromptCredentials,
      error: onError,
      success: onSuccess
    }
  );
}
```

The `promptCredentials`, `error`, and `success` functions are mandatory callback functions that must be defined in the authentication process.

If the Amazon DCV server prompts for credentials, the `promptCredentials` callback function receives the requested credential challenge from the Amazon DCV server. If the Amazon DCV server is configured to use system authentication, then the sign-in credentials must be provided. The following code samples assume that the username is `my_dcv_user` and that the password is `my_password`.

If authentication fails, the `error` callback function receives an error object from the Amazon DCV server.

If the authentication succeeds, the `success` callback function receives an array of couples that includes the session id ( `sessionId` ) and authorization tokens ( `authToken` ) for each session that the `my_dcv_user` user is allowed to connect to on the Amazon DCV server. The following code sample calls the `connect` function and connects to the first session returned in the array.

#### Note

In the following code example, replace `MY_DCV_USER` with your own username and `MY_PASSWORD` with your own password.

```

function onPromptCredentials(auth, challenge) {
  // Let's check if in challenge we have a username and password request
  if (challengeHasField(challenge, "username") && challengeHasField(challenge,
"password")) {
    auth.sendCredentials({username: MY_DCV_USER, password: MY_PASSWORD})
  } else {
    // Challenge is requesting something else...
  }
}

function challengeHasField(challenge, field) {
  return challenge.requiredCredentials.some(credential => credential.name === field);
}

function onError(auth, error) {
  console.log("Error during the authentication: " + error.message);
}

// We connect to the first session returned
function onSuccess(auth, result) {
  let {sessionId, authToken} = {...result[0]};

  connect(sessionId, authToken);
}

```

Connect to the Amazon DCV server. The `firstFrame` callback method is called when the first frame is received from the Amazon DCV server.

```

function connect (sessionId, authToken) {
  console.log(sessionId, authToken);

  dcv.connect({
    url: serverUrl,
    sessionId: sessionId,
    authToken: authToken,
    divId: "dcv-display",
    callbacks: {
      firstFrame: () => console.log("First frame received")
    }
  }).then(function (conn) {
    console.log("Connection established!");
    connection= conn;
  }).catch(function (error) {

```

```
    console.log("Connection failed with error " + error.message);
  });
}
```

## Bonus: Automatically create an HTML login form

The challenge object is returned when the `promptCredentials` callback function is called. It includes a property named `requiredCredentials` that is an array of objects - one object per credential that is requested by the Amazon DCV server. Each object includes the name and the type of the requested credential. You can use the challenge and `requiredCredentials` objects to automatically create an HTML login form.

The following code sample shows you how to do this.

```
let form,
    fieldSet;

function submitCredentials (e) {
  var credentials = {};
  fieldSet.childNodes.forEach(input => credentials[input.id] = input.value);
  auth.sendCredentials(credentials);
  e.preventDefault();
}

function createLoginForm () {
  var submitButton = document.createElement("button");

  submitButton.type = "submit";
  submitButton.textContent = "Login";

  form = document.createElement("form");
  fieldSet = document.createElement("fieldset");

  form.onsubmit = submitCredentials;
  form.appendChild(fieldSet);
  form.appendChild(submitButton);

  document.body.appendChild(form);
}

function addInput (name) {
  var type = name === "password" ? "password" : "text";
```

```
var inputField = document.createElement("input");
inputField.name = name;
inputField.id = name;
inputField.placeholder = name;
inputField.type = type;
fieldSet.appendChild(inputField);
}

function onPromptCredentials (_, credentialsChallenge) {
  createLoginForm();
  credentialsChallenge.requiredCredentials.forEach(challenge =>
    addInput(challenge.name));
}
```

## Work with Amazon DCV features

The availability of Amazon DCV features depends on the permissions configured for the Amazon DCV session and the capabilities of the client's web browser.

The features that are available in a Amazon DCV session are managed by the permissions that have been specified for the session. This means that even if a feature is supported by the Amazon DCV Web Client SDK, access to that feature might be prevented based on the permissions defined by the session administrator. For more information, see [Configuring Amazon DCV Authorization](#) in the *Amazon DCV Administrator Guide*.

## Understanding the featuresUpdate callback function

When the availability of a feature in a Amazon DCV session changes, the Amazon DCV Web Client SDK notifies you using the featuresUpdate callback function that you specify at the time of establishing the connection. For example:

```
featuresUpdate: function (connection, list) {
  ...
},
```

The callback function notifies you only of the features for which the availability has changed. The `list` parameter is an array of strings, and it includes only the names of the updated features. For example, if the availability of the audio input feature changes for the session, the parameter

includes only ["audio-in"]. If at a later point, the availability of the clipboard copy and paste features change for the session, the parameter includes only ["clipboard-copy", "clipboard-paste"].

## Handling feature updates

The `featuresUpdate` callback function only notifies you that the availability of one or more features has changed. To know which features were updated, you must query the feature using the `connection.queryFeature` method. This can be done at any time after the notification of change has been received. This method returns a `Promise` that resolves to the requested feature's updated status. The status value is always associated and it has a `Boolean` (`true | false`) property called `enabled`. Some features might have additional properties in the status value. If the feature's availability has not been updated, it's rejected.

The following example code shows how to do this.

```
// Connection callback called
function featuresUpdate (_, list) {
  if (list.length > 0) {
    list.forEach((feat) => {
      connection.queryFeature(feat).then(status => console.log(feat, "is",
        status.enabled));
    });
  }
}
```

## Use Amazon DCV Web UI SDK

The following tutorial shows you how to authenticate against the Amazon DCV server, connect to it and render the `DCVViewer` React component from the Amazon DCV Web UI SDK.

### Topics

- [Prerequisites](#)
- [Step 1: Prepare your HTML page](#)
- [Step 2: Authenticate, connect and render the DCVViewer React component.](#)
- [Updating from AWS-UI to Cloudscape Design System](#)

## Prerequisites

You need to install React , ReactDOM , Cloudscape Design Components React , Cloudscape Design Global Styles and Cloudscape Design Design Tokens .

```
$ npm i react react-dom @cloudscape-design/components @cloudscape-design/global-styles @cloudscape-design/design-tokens
```

You would also need to download Amazon DCV Web Client SDK . See [Getting started with the Amazon DCV Web Client SDK](#) to read the step-by-step guide on how to do that.

You must create an alias for importing the dcv module, since it is an external dependency for Amazon DCV Web UI SDK. For instance, if you are using webpack to bundle your web app, you can use the [resolve.alias](#) option like so:

```
const path = require('path');

module.exports = {
  //...
  resolve: {
    alias: {
      dcv: path.resolve('path', 'to', 'dcv.js'),
    },
  },
};
```

If you are using rollup for bundling, you can install [@rollup/plugin-alias](#), and use it like so:

```
import alias from '@rollup/plugin-alias';
const path = require('path');

module.exports = {
  //...
  plugins: [
    alias({
      entries: [
        { find: 'dcv', replacement: path.resolve('path', 'to', 'dcv.js') },
      ]
    })
  ]
};
```



## Step 1: Prepare your HTML page

In your web page, you must load the required JavaScript modules and you should have a `<div>` HTML element with a valid `id` where the entry component of your app will be rendered.

For example:

```
<!DOCTYPE html>
<html lang="en" style="height: 100%;">
  <head>
    <title>DCV first connection</title>
  </head>
  <body style="height: 100%;">
    <div id="root" style="height: 100%;"></div>
    <script type="module" src="index.js"></script>
  </body>
</html>
```

## Step 2: Authenticate, connect and render the DCVViewer React component.

This section shows how to complete the user authentication process, how to connect the Amazon DCV server, and how to render the `DCVViewer` React component.

First, from the `index.js` file, import `React`, `ReactDOM` and your top level `App` component.

```
import React from "react";
import ReactDOM from 'react-dom';
import App from './App';
```

Render the top level container node of your app.

```
ReactDOM.render(
  <React.StrictMode>
    <App />
  </React.StrictMode>,
  document.getElementById("root")
);
```

In the `App.js` file, import the Amazon DCV Web Client SDK as a ESM module, the `DCVViewer` React component from the Amazon DCV Web UI SDK, React and the Cloudscape Design Global Styles package.

```
import React from "react";
import dcv from "dcv";
import "@cloudscape-design/global-styles/index.css";
import {DCVViewer} from "../dcv-ui/dcv-ui.js";
```

Following is an example showing how to authenticate against the Amazon DCV Server and render the `DCVViewer` React component from Amazon DCV Web UI SDK, provided the authentication was successful.

```
const LOG_LEVEL = dcv.LogLevel.INFO;
const SERVER_URL = "https://your-dcv-server-url:port/";
const BASE_URL = "/static/js/dcvjs";

let auth;

function App() {
  const [authenticated, setAuthenticated] = React.useState(false);
  const [sessionId, setSessionId] = React.useState('');
  const [authToken, setAuthToken] = React.useState('');
  const [credentials, setCredentials] = React.useState({});

  const onSuccess = (_, result) => {
    var { sessionId, authToken } = { ...result[0] };

    console.log("Authentication successful.");

    setSessionId(sessionId);
    setAuthToken(authToken);
    setAuthenticated(true);
    setCredentials({});
  }

  const onPromptCredentials = (_, credentialsChallenge) => {
    let requestedCredentials = {};

    credentialsChallenge.requiredCredentials.forEach(challenge =>
      requestedCredentials[challenge.name] = "");
    setCredentials(requestedCredentials);
  }
}
```

```
}

const authenticate = () => {
  dcv.setLogLevel(LOG_LEVEL);

  auth = dcv.authenticate(
    SERVER_URL,
    {
      promptCredentials: onPromptCredentials,
      error: onError,
      success: onSuccess
    }
  );
}

const updateCredentials = (e) => {
  const { name, value } = e.target;
  setCredentials({
    ...credentials,
    [name]: value
  });
}

const submitCredentials = (e) => {
  auth.sendCredentials(credentials);
  e.preventDefault();
}

React.useEffect(() => {
  if (!authenticated) {
    authenticate();
  }
}, [authenticated]);

const handleDisconnect = (reason) => {
  console.log("Disconnected: " + reason.message + " (code: " + reason.code + ")");
  auth.retry();
  setAuthenticated(false);
}

return (
  authenticated ?
  <DCVViewer
    dcv={{
```

```

    sessionId: sessionId,
    authToken: authToken,
    serverUrl: SERVER_URL,
    baseUrl: BASE_URL,
    onDisconnect: handleDisconnect,
    logLevel: LOG_LEVEL
  }}
  uiConfig={{
    toolbar: {
      visible: true,
      fullscreenButton: true,
      multimonitorButton: true,
    },
  }}
/>
:
<div
  style={{
    height: window.innerHeight,
    backgroundColor: "#373737",
    display: 'flex',
    alignItems: 'center',
    justifyContent: 'center',
  }}
>
  <form>
    <fieldset>
      {Object.keys(credentials).map((cred) => (
        <input
          key={cred}
          name={cred}
          placeholder={cred}
          type={cred === "password" ? "password" : "text"}
          onChange={updateCredentials}
          value={credentials[cred]}
        />
      ))}
    </fieldset>
    <button
      type="submit"
      onClick={submitCredentials}
    >
      Login
    </button>

```

```
        </form>
      </div>
    );
  }

  const onError = (_, error) => {
    console.log("Error during the authentication: " + error.message);
  }

  export default App;
```

The `promptCredentials`, `error`, and `success` functions are mandatory callback functions that must be defined in the authentication process.

If the Amazon DCV server prompts for credentials, the `promptCredentials` callback function receives the requested credential challenge from the Amazon DCV server. If the Amazon DCV server is configured to use system authentication, then the credentials must be provided in the form of a user name and a password.

If authentication fails, the `error` callback function receives an error object from the Amazon DCV server.

If the authentication succeeds, the `success` callback function receives an array of couples that includes the session id ( `sessionId` ) and authorization tokens ( `authToken` ) for each session that the user is allowed to connect to on the Amazon DCV server. The code sample above updates the React state to render the `DCVViewer` component on successful authentication.

To know more about the properties accepted by this component, see the [Amazon DCV Web UI SDK reference](#).

To know more about self-signed certificates, see the [Redirection clarifications with self-signed certificates](#).

## Updating from AWS-UI to Cloudscape Design System

Starting SDK version 1.3.0 we updated our `DCVViewer` component from AWS-UI to its evolution: [Cloudscape Design](#).

Cloudscape uses a different visual theme than AWS-UI, but the underlying code base remains the same. Thus, migrating your application based on the `DCVViewer` should be easy. To migrate,

replace the AWS-UI related NPM packages you've installed with the associated Cloudscape packages:

AWS-UI package name	Cloudscape package name
@awsui/components-react	@cloudscape-design/components
@awsui/global-styles	@cloudscape-design/global-styles
@awsui/collection-hooks	@cloudscape-design/collection-hooks
@awsui/design-tokens	@cloudscape-design/design-tokens

For further details on the migration please refer to the [AWS-UI GitHub documentation page](#).

# SDK reference

This section provides descriptions, syntax, and usage examples for the Amazon DCV Web Client SDK.

## Topics

- [DCV module](#)
- [Connection Class](#)
- [Authentication Class](#)
- [Resource Class](#)
- [Amazon DCV Web UI SDK](#)

## DCV module

A module that implements the client side of the DCV protocol.

### Exposes

- [Methods](#)
- [Members](#)
- [Type and callback definitions](#)

## Methods

### List

- [authenticate\(url, callbacks\) → {Authentication}](#)
- [connect\(config\) → {Promise.<Connection>|Promise.<{code: ConnectionErrorCode, message: string}>}](#)
- [setLogHandler\(handler\) → {void}](#)
- [setLogLevel\(level\) → {void}](#)

### **authenticate(url, callbacks) → {[Authentication](#)}**

Starts the authentication process for the specified Amazon DCV server endpoint.

**Parameters:**

Name	Type	Description
url	string	The host name and port of the running Amazon DCV server in the following format: <code>https://dcv_host_address:port</code> . For example: <code>https://my-dcv-server:8443</code> .
callbacks	<a href="#">authenticationCallbacks</a>	The callbacks that are available to be called during the authentication process.

**Returns:**

- The Authentication object.

Type

[Authentication](#)

**connect(config) → {Promise.<[Connection](#)>|Promise.<{code: [ConnectionErrorCode](#), message: string}>>}**

Connects to the specified Amazon DCV server endpoint. If connection succeeds, it returns a Connection object. If connection fails, it returns an error object.

**Parameters:**

Name	Type	Description
config	<a href="#">ConnectionConfig</a>	The ConnectionConfig object.



**Returns:**

- A Connection object, or an error object.

## Type

Promise.<[Connection](#)> | Promise.<{code: [ConnectionErrorCode](#), message: string}>

**setLogHandler(handler) → {void}**

Sets a custom log handler function. When overriding the default log handler, the original log entry position will be lost when debugging with the browser console.

**Parameters:**

Name	Type	Description
handler	function	The custom log handler function. The handler function contains level (number), levelName (string), domain (string), and message (string).

**Returns:**

## Type

void

**setLogLevel(level) → {void}**

Sets the log level. This is required only if the default log handler is used.

**Parameters:**

Name	Type	Description
level	<a href="#">LogLevel</a>	The log level to use.

**Returns:**

Type

void

**Members****List**

- [\(constant\) AudioError :AudioErrorCode](#)
- [\(constant\) AuthenticationError :AuthenticationErrorCode](#)
- [\(constant\) ChannelError :ChannelErrorCode](#)
- [\(constant\) ClosingReasonError :ClosingReasonErrorCode](#)
- [\(constant\) ConnectionError :ConnectionErrorCode](#)
- [\(constant\) CustomChannelError :CustomChannelErrorCode](#)
- [\(constant\) DisplayConfigError :DisplayConfigErrorCode](#)
- [\(constant\) FileStorageError :FileStorageErrorCode](#)
- [\(constant\) LogLevel :LogLevel](#)
- [\(constant\) MultiMonitorError :MultiMonitorErrorCode](#)
- [\(constant\) ResolutionError :ResolutionErrorCode](#)
- [\(constant\) TimezoneRedirectionError :TimezoneRedirectionErrorCode](#)
- [\(constant\) TimezoneRedirectionSetting :TimezoneRedirectionSettingCode](#)
- [\(constant\) TimezoneRedirectionStatus :TimezoneRedirectionStatusCode](#)
- [\(constant\) version](#)
- [\(constant\) ScreenshotError :ScreenshotErrorCode](#)
- [\(constant\) WebcamError :WebcamErrorCode](#)

**(constant) AudioError :[AudioErrorCode](#)**

The AudioError codes enum.

**Type:**

- [AudioErrorCode](#)

**(constant) AuthenticationError :[AuthenticationErrorCode](#)**

The AuthenticationError codes enum.

**Type:**

- [AuthenticationErrorCode](#)

**(constant) ChannelError :[ChannelErrorCode](#)**

The ChannelError codes enum.

**Type:**

- [ChannelErrorCode](#)

**(constant) ClosingReasonError :[ClosingReasonErrorCode](#)**

The ClosingReasonError codes enum.

**Type:**

- [ClosingReasonErrorCode](#)

**(constant) ConnectionError :[ConnectionErrorCode](#)**

The ConnectionError codes enum.

**Type:**

- [ConnectionErrorCode](#)

**(constant) CustomChannelError :[CustomChannelErrorCode](#)**

The CustomChannelError codes enum.

**Type:**

- [CustomChannelErrorCode](#)

**(constant) DisplayConfigError : [DisplayConfigErrorCode](#)**

The DisplayConfigError codes enum.

**Type:**

- [DisplayConfigErrorCode](#)

**(constant) FileStorageError : [FileStorageErrorCode](#)**

The FileStorageError codes enum.

**Type:**

- [FileStorageErrorCode](#)

**(constant) LogLevel : [LogLevel](#)**

The available SDK log levels.

**Type:**

- [LogLevel](#)

**(constant) MultiMonitorError : [MultiMonitorErrorCode](#)**

The MultiMonitorError codes enum.

**Type:**

- [MultiMonitorErrorCode](#)

**(constant) ResolutionError : [ResolutionErrorCode](#)**

The ResolutionError codes enum.

**Type:**

- [ResolutionErrorCode](#)

**(constant) TimezoneRedirectionError :[TimezoneRedirectionErrorCode](#)**

The TimezoneRedirectionError codes enum.

**Type:**

- [TimezoneRedirectionErrorCode](#)

**(constant) TimezoneRedirectionSetting :[TimezoneRedirectionSettingCode](#)**

The TimezoneRedirectionSetting codes enum.

**Type:**

- [TimezoneRedirectionSettingCode](#)

**(constant) TimezoneRedirectionStatus :[TimezoneRedirectionStatusCode](#)**

The TimezoneRedirectionStatus codes enum.

**Type:**

- [TimezoneRedirectionStatusCode](#)

**(constant) version**

The Amazon DCV version with major, minor, patch, revision, extended, and versionStr.

**Properties:**

Name	Type	Description
major	integer	The major version number.
minor	integer	The minor version number.
patch	integer	The patch version number.
revision	integer	The revision number.

Name	Type	Description
extended	string	The extended string.
versionStr	string	A concatenation of the major, minor, patch, and revision numbers in the form <code>major.minor.patch+build.revision</code> .

### (constant) ScreenshotError :[ScreenshotErrorCode](#)

The ScreenshotError codes enum.

Type:

- [ScreenshotErrorCode](#)

### (constant) WebcamError :[WebcamErrorCode](#)

The WebcamError codes enum.

Type:

- [WebcamErrorCode](#)

## Type and callback definitions

List

- [AudioErrorCode](#)
- [authenticationCallbacks](#)
- [AuthenticationErrorCode](#)
- [authErrorCallback\(authentication, error\)](#)
- [authPromptCredentialsCallback\(authentication, challenge\)](#)
- [authSuccessCallback\(authentication, authenticationData\)](#)
- [Channel](#)

- [ChannelErrorCode](#)
- [clipboardEventCallback\(event\)](#)
- [ClosingReasonErrorCode](#)
- [Colorspace](#)
- [connectionCallbacks](#)
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- [createDirectory\(path\)](#)
- [CustomChannelErrorCode](#)
- [dataChannelCallback\(info\)](#)
- [deleteFile\(path\)](#)
- [deviceChangeEventCallback\(\)](#)
- [disconnectCallback\(reason\)](#)
- [displayAvailabilityCallback\(status, displayId\)](#)
- [DisplayConfigErrorCode](#)
- [displayLayoutCallback\(serverWidth, serverHeight, heads\)](#)
- [feature](#)
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- [fileDownloadCallback\(fileResource\)](#)
- [filePrintedCallback\(printResource\)](#)
- [filestorage](#)
- [filestorageEnabledCallback\(enabled\)](#)
- [FileStorageErrorCode](#)
- [firstFrameCallback\(resizeEnabled, relativeMouseModeEnabled, displayId\)](#)
- [idleWarningNotificationCallback\(disconnectionDateTime\)](#)
- [collaboratorListCallback\(collaborators\)](#)
- [licenseNotificationCallback\(notification\)](#)
- [list\(path\)](#)

- [LogLevel](#)
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- [MultiMonitorErrorCode](#)
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- [renameDirectory\(src, dest\)](#)
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- [retrieveFile\(path\)](#)
- [screenshotCallback\(screenshot\)](#)
- [ScreenshotErrorCode](#)
- [serverInfo](#)
- [stats](#)
- [storeFile\(file, dir\)](#)
- [TimezoneRedirectionErrorCode](#)
- [TimezoneRedirectionSettingCode](#)
- [TimezoneRedirectionStatusCode](#)
- [WebcamErrorCode](#)

## AudioErrorCode

The AudioError code enums available in the DCV module

- SETTING\_AUDIO\_FAILED
- CHANNEL\_NOT\_AVAILABLE

### Type:

- number

## authenticationCallbacks

Authentication callbacks



**Type:**

- Object

**Properties:**

Name	Type	Description
promptCredentials	<a href="#">authPromptCredentialsCallback</a>	The callback function to be called when the user is challenged for credentials.
error	<a href="#">authErrorCallback</a>	The callback function to be called when authentication fails.
success	<a href="#">authSuccessCallback</a>	The callback function to be called when authentication succeeds.

**AuthenticationErrorCode**

The AuthenticationError code enums available in the DCV module

- INVALID\_MESSAGE
- UNKNOWN\_AUTH\_MODE
- SESSION\_NOT\_AVAILABLE
- NO\_SESSIONS
- WRONG\_CREDENTIALS
- SASL\_CHALLENGE
- SASL\_AUTH\_MECHANISM
- FAILED\_COMMUNICATION
- AUTHENTICATION\_REJECTED
- GENERIC\_ERROR
- WRONG\_CREDENTIALS\_FORMAT
- WRONG\_CREDENTIALS\_TYPE
- UNREQUESTED\_CREDENTIALS

- MISSING\_CREDENTIAL

### Type:

- number

## authErrorCallback(authentication, error)

The callback function to be called when authentication fails.

### Parameters:

Name	Type	Description									
authentication	<a href="#">Authentication</a>	The Authentication object.									
error	Object	The error object raised by the authentication process. <table border="1" data-bbox="1068 1037 1523 1518"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>code</td> <td><a href="#">AuthenticationErrorCode</a></td> <td>The error code.</td> </tr> <tr> <td>message</td> <td>string</td> <td>The error message.</td> </tr> </tbody> </table>	Name	Type	Description	code	<a href="#">AuthenticationErrorCode</a>	The error code.	message	string	The error message.
Name	Type	Description									
code	<a href="#">AuthenticationErrorCode</a>	The error code.									
message	string	The error message.									

## authPromptCredentialsCallback(authentication, challenge)

The callback function to be called when the user is challenged for credentials. The user must answer the challenge by providing the requested credentials.

**Parameters:**

Name	Type	Description							
authentication	<a href="#">Authentication</a>	The Authentication object.							
challenge	Object	The challenge.							
		<table border="1"> <thead> <tr> <th data-bbox="1068 510 1216 636">Name</th> <th data-bbox="1216 510 1362 636">Type</th> <th data-bbox="1362 510 1508 636">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="1068 636 1216 1031">required_credentials</td> <td data-bbox="1216 636 1362 1031">Array.&lt;Objects&gt;</td> <td data-bbox="1362 636 1508 1031">An array of requested credential objects.</td> </tr> </tbody> </table>	Name	Type	Description	required_credentials	Array.<Objects>	An array of requested credential objects.	
		Name	Type	Description					
required_credentials	Array.<Objects>	An array of requested credential objects.							
<table border="1"> <thead> <tr> <th data-bbox="1382 1039 1458 1165">Name</th> <th data-bbox="1458 1039 1528 1165">Type</th> <th data-bbox="1528 1039 1620 1165">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="1382 1165 1458 1528">name</td> <td data-bbox="1458 1165 1528 1528">String</td> <td data-bbox="1528 1165 1620 1528">The name of the requested credential.</td> </tr> <tr> <td data-bbox="1382 1528 1458 1776">type</td> <td data-bbox="1458 1528 1528 1776">String</td> <td data-bbox="1528 1528 1620 1776">The type of the requested</td> </tr> </tbody> </table>	Name	Type	Description	name	String	The name of the requested credential.	type	String	The type of the requested
Name	Type	Description							
name	String	The name of the requested credential.							
type	String	The type of the requested							

Name	Type	Description												
		<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>credential.</td> </tr> </tbody> </table> </td> </tr> </tbody> </table>	Name	Type	Description			<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>credential.</td> </tr> </tbody> </table>	Name	Type	Description			credential.
Name	Type	Description												
		<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>credential.</td> </tr> </tbody> </table>	Name	Type	Description			credential.						
Name	Type	Description												
		credential.												

### authSuccessCallback(authentication, authenticationData)

The callback function to be called when authentication succeeds.

#### Parameters:

Name	Type	Description									
authentication	<a href="#">Authentication</a>	The Authentication object.									
authenticationData	Array.<Object>	<p>An array of objects that include Amazon DCV session IDs and authentication tokens.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>sessionID</td> <td>string</td> <td>The Amazon DCV session ID.</td> </tr> <tr> <td>authToken</td> <td>string</td> <td>The authentication token.</td> </tr> </tbody> </table>	Name	Type	Description	sessionID	string	The Amazon DCV session ID.	authToken	string	The authentication token.
Name	Type	Description									
sessionID	string	The Amazon DCV session ID.									
authToken	string	The authentication token.									

Name	Type	Description		
		Name	Type	Description
				ation token for the Amazon DCV session.

## Channel

The available channels that can be specified.

### Type:

- "clipboard" | "display" | "input" | "audio" | "filestorage"

## ChannelErrorCode

The ChannelError code enums available in the DCV module

- ALREADY\_OPEN
- INITIALIZATION\_FAILED
- REJECTED

### Type:

- number

## clipboardEventCallback(event)

The callback function to be called when a clipboardEvent is generated.

**Parameters:**

Name	Type	Description															
event	Object	Information about the clipboard event. <table border="1" data-bbox="1068 470 1507 1881"> <thead> <tr> <th data-bbox="1068 470 1182 596">Name</th> <th data-bbox="1182 470 1287 596">Type</th> <th data-bbox="1287 470 1398 596">Attributes</th> <th data-bbox="1398 470 1507 596">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="1068 596 1182 1680">name</td> <td data-bbox="1182 596 1287 1680">                     established   copy   paste   dataS   lert   autoC   one   newD   ailable   autoP   Done   remot   or   paste / lableD                 </td> <td data-bbox="1287 596 1398 1680"></td> <td data-bbox="1398 596 1507 1680">                     Always present. The name of the event.                 </td> </tr> <tr> <td data-bbox="1068 1680 1182 1881">clipboardData</td> <td data-bbox="1182 1680 1287 1881">Object   string</td> <td data-bbox="1287 1680 1398 1881"></td> <td data-bbox="1398 1680 1507 1881">The data in the</td> </tr> </tbody> </table>				Name	Type	Attributes	Description	name	established   copy   paste   dataS   lert   autoC   one   newD   ailable   autoP   Done   remot   or   paste / lableD		Always present. The name of the event.	clipboardData	Object   string		The data in the
Name	Type	Attributes	Description														
name	established   copy   paste   dataS   lert   autoC   one   newD   ailable   autoP   Done   remot   or   paste / lableD		Always present. The name of the event.														
clipboardData	Object   string		The data in the														

Name	Type	Description			
		Name	Type	Attributes	Description
					clipboard.
		autoCopy	boolean	<optional>	Indicates whether automatic copying from the session clipboard to the local client clipboard is enabled.
		maxDataSize	number	<optional>	The maximum amount of data that can be placed in the clipboard.

Name	Type	Description			
		Name	Type	Attrib s	Descripti on
		error	string	<opti >	Error informati on if applicabl e.

## ClosingReasonErrorCode

The ClosingReasonError code enums available in the DCV module

- TRANSPORT\_ERROR
- NO\_ERROR
- GENERIC\_ERROR
- INTERNAL\_SERVER\_ERROR
- PROTOCOL\_ERROR
- AUTHORIZATION\_DENIED
- AUTHORIZATION\_REVOKED
- ACCESS\_REJECTED
- IDLE\_TIMEOUT\_EXPIRED
- DISCONNECT\_BY\_OWNER
- DISCONNECT\_BY\_USER
- EVICTED
- EXTERNAL\_PROTOCOL\_CONNECTION\_EVICTED
- DISCONNECTION\_REQUESTED

### Type:

- number



## Colorspace

The available colorspace that can be specified.

### Type:

- "RGB" | "YUV\_REC601" | "YUV\_REC709"

## connectionCallbacks

The callbacks that are available to be called in the event of a connection error.

### Type:

- Object

### Properties:

Name	Type	Description
disconnect	<a href="#">disconnectCallback</a>	The callback function to be called when the connection ends.
displayLayout	<a href="#">displayLayoutCallback</a>	The callback function to be called when the display layout or resolution is changed.
displayAvailability	<a href="#">displayAvailabilityCallback</a>	The callback function to be called when a display's availability changes.
firstFrame	<a href="#">firstFrameCallback</a>	The callback function to be called when the first frame is received from the Amazon DCV server.

Name	Type	Description
filePrinted	<a href="#">filePrintedCallback</a>	The callback function to be called when a file is printed on the Amazon DCV server.
fileDownload	<a href="#">fileDownloadCallback</a>	The callback function to be called when a file is ready to be downloaded from the Amazon DCV server.
dataChannel	<a href="#">dataChannelCallback</a>	The callback function to be called when the Amazon DCV server sends a notification about the availability of a data channel.
licenseNotification	<a href="#">licenseNotificationCallback</a>	The callback function to be called when the Amazon DCV server sends a notification about the license state.
idleWarningNotification	<a href="#">idleWarningNotificationCallback</a>	The callback function to be called when the Amazon DCV server sends an idle timeout warning.
collaboratorList	<a href="#">collaboratorListCallback</a>	The callback function to be called when the Amazon DCV server sends the list of collaborators (since Amazon DCV Web Client SDK version 1.1.0).
qualityIndicatorState	<a href="#">qualityIndicatorStateCallback</a>	The callback function to be called when the connection quality indicator changes state.

Name	Type	Description
filestorageEnabled	<a href="#">filestorageEnabledCallback</a>	The callback function to be called when file storage is enabled or disabled.
featuresUpdate	<a href="#">featuresUpdateCallback</a>	The callback function to be called when a feature's status changes.
clipboardEvent	<a href="#">clipboardEventCallback</a>	The callback function to be called when a <code>clipboardEvent</code> is generated.
deviceChangeEvent	<a href="#">deviceChangeEventCallback</a>	The callback function to be called when an <code>deviceChangeEvent</code> is triggered.
screenshot	<a href="#">screenshotCallback</a>	The callback function to be called when a screenshot is available.

## ConnectionConfig

The configuration for a Amazon DCV connection.

### Type:

- Object

### Properties:

Name	Type	Description
url	string	The host name and port of the running Amazon DCV server in the following format: <code>https://d</code>

Name	Type	Description
		<code>cv_host_address:port</code> . For example: <code>https://my-dcv-server:8443</code> .
<code>sessionId</code>	string	The Amazon DCV session ID.
<code>authToken</code>	string	The authentication token to use when connecting to the server.
<code>baseUrl</code>	string	The absolute or relative URL from which to load SDK files.
<code>resourceBaseUrl</code>	string	The absolute or relative URL from which to access DCV resources.
<code>enabledChannels</code>	Array.< <a href="#">Channel</a> >	Indicates the list of channels that can be enabled. If not specified or an empty array is provided, it defaults to all the available channels.
<code>losslessColorspace</code>	<a href="#">Colorspace</a>	Indicates the colorspace that will be used. If not specified, it defaults to "RGB".
<code>divId</code>	string	The ID of the <code>div</code> object in the HTML DOM where SDK should create the canvas with the remote stream.
<code>volumeLevel</code>	integer	The preferred volume level. The valid range is 0 to 100.

Name	Type	Description
clipboardAutoSync	boolean	Indicates whether automatic copying from the Amazon DCV session clipboard to the local client clipboard is enabled for compatible web browsers.
dynamicAudioTuning	boolean	Indicates whether to dynamically tune the audio based on the Amazon DCV server audio settings when a connection is established.
clientHiDpiScaling	boolean	Indicates whether to scale the canvas based on the client's DPI.
highColorAccuracy	boolean	Indicates whether high color accuracy should be used if available. If not specified, it defaults to false.
enableWebCodecs	Boolean	Indicates whether WebCodecs should be used if available . Defaults to false if not specified.
observers	<a href="#">connectionCallbacks</a>	The callback functions to call for events that are related to the connection.
callbacks	<a href="#">connectionCallbacks</a>	The same as the observers property, but each callback includes the <a href="#">Connection</a> object as the first parameter.

## ConnectionErrorCode

The ConnectionError code enums available in the DCV module

- ALREADY\_OPEN
- INVALID\_CONFIG
- INITIALIZATION\_FAILED
- REJECTED
- MAIN\_CHANNEL\_ALREADY\_OPEN
- GENERIC\_ERROR (since DCV Server 2021.0)
- INTERNAL\_SERVER\_ERROR (since DCV Server 2021.0)
- AUTHENTICATION\_FAILED (since DCV Server 2021.0)
- PROTOCOL\_ERROR (since DCV Server 2021.0)
- INVALID\_SESSION\_ID (since DCV Server 2021.0)
- INVALID\_CONNECTION\_ID (since DCV Server 2021.0)
- CONNECTION\_LIMIT\_REACHED (since DCV Server 2021.0)
- SERVER\_UNREACHABLE (since DCV Server 2022.1)
- GATEWAY\_BUSY
- UNSUPPORTED\_CREDENTIAL (since DCV Server 2022.2)
- TRANSPORT\_ERROR

### Type:

- number

## createDirectory(path)

### Parameters:

Name	Type	Description
path	string	The absolute path on the server where we want to create a directory. It should also include the name of the target directory.

## CustomChannelErrorCode

The CustomChannelError code enums available in the DCV module

- TRANSPORT\_ERROR

### Type:

- number

## dataChannelCallback(info)

The callback function to be called when the Amazon DCV server sends a notification about the availability of a data channel.

### Parameters:

Name	Type	Description									
info	Object	Information about the data channel. <table border="1" data-bbox="1068 1178 1523 1829"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>name</td> <td>string</td> <td>The name of the data channel.</td> </tr> <tr> <td>token</td> <td>string</td> <td>The authentication token for the</td> </tr> </tbody> </table>	Name	Type	Description	name	string	The name of the data channel.	token	string	The authentication token for the
Name	Type	Description									
name	string	The name of the data channel.									
token	string	The authentication token for the									

Name	Type	Description		
		Name	Type	Description
				data channel.

## deleteFile(path)

### Parameters:

Name	Type	Description
path	string	The absolute path on the server identifying the file we want to delete.

## deviceChangeEventCallback()

The callback function to be called when an `deviceChange` event is triggered.

## disconnectCallback(reason)

The callback function to be called when the connection ends.

### Parameters:

Name	Type	Description
reason	Object	The reason for the disconnection.



Name	Type	Description									
		<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>code</td> <td>number</td> <td>The reason code.</td> </tr> <tr> <td>message</td> <td>string</td> <td>The reason message.</td> </tr> </tbody> </table>	Name	Type	Description	code	number	The reason code.	message	string	The reason message.
Name	Type	Description									
code	number	The reason code.									
message	string	The reason message.									

## **displayAvailabilityCallback(status, displayId)**

The callback function to be called when a display's availability changes.

### **Parameters:**

Name	Type	Description									
status	Object	<p>The status of the display.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>enabled</td> <td>boolean</td> <td>Indicates if the display is enabled.</td> </tr> <tr> <td>closed</td> <td>boolean</td> <td>Indicates if the display</td> </tr> </tbody> </table>	Name	Type	Description	enabled	boolean	Indicates if the display is enabled.	closed	boolean	Indicates if the display
Name	Type	Description									
enabled	boolean	Indicates if the display is enabled.									
closed	boolean	Indicates if the display									

Name	Type	Description		
		Name	Type	Description
				is closed.
displayId	number	The identifier for the display.		

## DisplayConfigErrorCode

The DisplayConfigError code enums available in the DCV module

- INVALID\_ARGUMENT
- UNSUPPORTED\_OPERATION
- NO\_CHANNEL

### Type:

- number

## displayLayoutCallback(serverWidth, serverHeight, heads)

The callback function to be called when the display layout or resolution is changed.

### Parameters:

Name	Type	Description
serverWidth	number	The width (in pixels) of the primary display.
serverHeight	number	The height (in pixels) of the primary display.
heads	Array.< <a href="#">Monitor</a> >	The display heads supported by the Amazon DCV server.

## feature

The feature values.

- `display` - Indicates the availability of a single-display video stream.
- `display-multi` - Indicates the availability of a multi-display video stream.
- `high-color-accuracy` - Indicates the availability of high color accuracy (since Amazon DCV Web Client SDK version 1.1.0).
- `mouse` - Indicates the availability of mouse functionality.
- `keyboard` - Indicates the availability of keyboard functionality.
- `keyboard-sas` - Indicates the availability of SAS sequence (Control + Alt + Delete) functionality.
- `relative-mouse` - Indicates the availability of relative mouse mode.
- `clipboard-copy` - Indicates the availability of clipboard copy functionality from Amazon DCV server to the client.
- `clipboard-paste` - Indicates the availability of clipboard paste functionality from the client to the Amazon DCV server.
- `audio-in` - Indicates the availability of audio input functionality using the microphone.
- `audio-out` - Indicates the availability of audio playback functionality.
- `webcam` - Indicates the availability of webcam streaming functionality.
- `file-download` - Indicates availability of file download functionality from the Amazon DCV server to the client.
- `file-upload` - Indicates availability of file upload functionality from the client to the Amazon DCV server.
- `timezone-redirect` - Indicates the availability of timezone redirection functionality (since Amazon DCV Web Client SDK version 1.3.0).

### Type:

- `string`

## featuresUpdateCallback(featuresList)

The callback function to be called when a feature's status changes.

**Parameters:**

Name	Type	Description
featuresList	Array.< <a href="#">feature</a> >	An array of features that have changed.

**fileDownloadCallback(fileResource)**

The callback function to be called when a file is ready to be downloaded from the Amazon DCV server.

**Parameters:**

Name	Type	Description									
fileResource	Object	Information about the file that is ready for download. <table border="1" data-bbox="1068 1079 1529 1791"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>id</td> <td>string</td> <td>The identifier for the file.</td> </tr> <tr> <td>url</td> <td>string</td> <td>The URL to use to download the file.</td> </tr> </tbody> </table>	Name	Type	Description	id	string	The identifier for the file.	url	string	The URL to use to download the file.
Name	Type	Description									
id	string	The identifier for the file.									
url	string	The URL to use to download the file.									

Name	Type	Description		
		<b>Name</b>	<b>Type</b>	<b>Description</b>
		domain	string	The resource domain.
		token	string	The authentication token to use to download the file. The token is also included in the URL.

## filePrintedCallback(printResource)

The callback function to be called when a file is printed on the Amazon DCV server.

### Parameters:

Name	Type	Description
printResource	Object	Information about the printed file.

Name	Type	Description		
		<b>Name</b>	<b>Type</b>	<b>Description</b>
		id	string	The identifier for the printed file.
		url	string	The URL to use to download the printed file.
		domain	string	The resource domain. In this case, printer.
		token	string	The authentication token to use to download the printed file.

Name	Type	Description		
		Name	Type	Description
				The token is also included in the URL.

## filestorage

Object that allows for exploring and performing actions on the file system.

### Type:

- Object

### Properties:

Name	Type	Description
list	<a href="#">list</a>	Function that allows to list the items (files and directories) present at the supplied path on the server.
createDirectory	<a href="#">createDirectory</a>	Function that allows to create a directory at the specified path on the server.
retrieveFile	<a href="#">retrieveFile</a>	Function that allows to locally download a file at the specified path on the server.

Name	Type	Description
deleteFile	<a href="#">deleteFile</a>	Function that allows to delete a file at the specified path on the server.
renameFile	<a href="#">renameFile</a>	Function that allows to rename a file from the specified source path to the specified destination path.
renameDirectory	<a href="#">renameDirectory</a>	Function that allows to rename a directory from the specified source path to the absolute destination path.
storeFile	<a href="#">storeFile</a>	Function that allows to upload a local file to the supplied path on the server.

## filestorageEnabledCallback(enabled)

The callback function to be called when file storage is enabled. Lazy channel on Internet Explorer 11 only.

### Parameters:

Name	Type	Description
enabled	boolean	Indicates whether file storage is enabled.

## FileStorageErrorCode

The FileStorageError code enums available in the DCV module

- CANCELLED



- ABORTED
- INVALID\_ARGUMENT
- NOT\_IMPLEMENTED
- ERROR
- ALREADY\_EXIST
- NOT\_FOUND

**Type:**

- number

**firstFrameCallback(resizeEnabled, relativeMouseModeEnabled, displayId)**

The callback function to be called when the first frame is received from the Amazon DCV server. Emitted for each display.

**Parameters:**

Name	Type	Description
resizeEnabled	boolean	Indicates whether the server supports resizing the client display layout.
relativeMouseModeEnabled	boolean	Indicates whether the server supports relative mouse mode.
displayId	number	The identifier for the display.

**idleWarningNotificationCallback(disconnectionDateTime)**

The callback function to be called when the Amazon DCV server sends an idle timeout warning.

**Parameters:**

Name	Type	Description
disconnectionDate Time	Date	The date and time of the disconnection.

**collaboratorListCallback(collaborators)**

The callback function to be called when the Amazon DCV server sends the list of collaborators.

**Parameters:**

Name	Type	Description									
collaborators	Array.<Object>	A list of objects containing information on collaborators. <table border="1" data-bbox="1068 1033 1529 1839"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>username</td> <td>string</td> <td>The username of the collaborator.</td> </tr> <tr> <td>owner</td> <td>boolean</td> <td>Indicates whether the collaborator is the session owner.</td> </tr> </tbody> </table>	Name	Type	Description	username	string	The username of the collaborator.	owner	boolean	Indicates whether the collaborator is the session owner.
Name	Type	Description									
username	string	The username of the collaborator.									
owner	boolean	Indicates whether the collaborator is the session owner.									

Name	Type	Description						
		<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>connect number nId</td> <td></td> <td>Indicates the ID assigned by the server to the connection.</td> </tr> </tbody> </table>	Name	Type	Description	connect number nId		Indicates the ID assigned by the server to the connection.
Name	Type	Description						
connect number nId		Indicates the ID assigned by the server to the connection.						

## licenseNotificationCallback(notification)

The callback function to be called when the Amazon DCV server sends a notification about the license state.

### Parameters:

Name	Type	Description									
notification	Object	The notification. <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>product</td> <td>string</td> <td>The DCV product.</td> </tr> <tr> <td>status</td> <td>string</td> <td>The status of the license.</td> </tr> </tbody> </table>	Name	Type	Description	product	string	The DCV product.	status	string	The status of the license.
Name	Type	Description									
product	string	The DCV product.									
status	string	The status of the license.									

Name	Type	Description		
		Name	Type	Description
		message	string	A message.
		leftDay	number	The number of days before the license expires.
		isDemo	boolean	Indicates if the license is a demo license.
		numUnlicensed	number	The number of unlicensed connections.
		licensingMode	string	The licensing mode.
		documentationUrl	string	The URL for the

Name	Type	Description		
		Name	Type	Description
				documentation.

## list(path)

### Parameters:

Name	Type	Description
path	string	The absolute path on the server of which we want to list the content.

## LogLevel

The available SDK log levels.

### Type:

- TRACE | DEBUG | INFO | WARN | ERROR | SILENT

## Monitor

### Type:

- Object

### Properties:

Name	Type	Description
name	string	The name of the display head.

Name	Type	Description															
rect	Object	<p>Information about the display head.</p> <table border="1" data-bbox="1068 367 1511 1848"> <thead> <tr> <th data-bbox="1068 367 1216 495">Name</th> <th data-bbox="1216 367 1362 495">Type</th> <th data-bbox="1362 367 1511 495">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="1068 495 1216 911">x</td> <td data-bbox="1216 495 1362 911">number</td> <td data-bbox="1362 495 1511 911">The initial x coordinate for the display head.</td> </tr> <tr> <td data-bbox="1068 911 1216 1327">y</td> <td data-bbox="1216 911 1362 1327">number</td> <td data-bbox="1362 911 1511 1327">The initial y coordinate for the display head.</td> </tr> <tr> <td data-bbox="1068 1327 1216 1694">width</td> <td data-bbox="1216 1327 1362 1694">number</td> <td data-bbox="1362 1327 1511 1694">The width (in pixels) of the display head.</td> </tr> <tr> <td data-bbox="1068 1694 1216 1848">height</td> <td data-bbox="1216 1694 1362 1848">number</td> <td data-bbox="1362 1694 1511 1848">The height (in</td> </tr> </tbody> </table>	Name	Type	Description	x	number	The initial x coordinate for the display head.	y	number	The initial y coordinate for the display head.	width	number	The width (in pixels) of the display head.	height	number	The height (in
Name	Type	Description															
x	number	The initial x coordinate for the display head.															
y	number	The initial y coordinate for the display head.															
width	number	The width (in pixels) of the display head.															
height	number	The height (in															

Name	Type	Description		
		Name	Type	Description
				pixels) of the display head.
primary	boolean	Indicates whether the display head is the primary display head. This is determined from the remote operating system if available.		
dpi	number	The DPI of the display head.		

## MultiMonitorErrorCode

The MultiMonitorError code enums available in the DCV module

- NO\_DISPLAY\_CHANNEL
- MAX\_DISPLAY\_NUMBER\_REACHED
- INVALID\_ARGUMENT
- DISPLAY\_NOT\_OPENED\_BY\_SERVER
- REQUEST\_TIMEOUT
- GENERIC\_ERROR
- NO\_ERROR

### Type:

- number

## qualityIndicatorStateCallback(state)

The callback function to be called when the connection quality indicator changes state.

**Parameters:**

Name	Type	Description												
state	Array.<Object>	<p>Information about the connection quality.</p> <table border="1" data-bbox="1068 474 1507 1421"> <thead> <tr> <th data-bbox="1068 474 1216 600">Name</th> <th data-bbox="1216 474 1362 600">Type</th> <th data-bbox="1362 474 1507 600">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="1068 600 1216 873">name</td> <td data-bbox="1216 600 1362 873">string</td> <td data-bbox="1362 600 1507 873">The name of the indicator.</td> </tr> <tr> <td data-bbox="1068 873 1216 1146">status</td> <td data-bbox="1216 873 1362 1146">NORMAL   WARNING   CRITICAL</td> <td data-bbox="1362 873 1507 1146">Description of the status.</td> </tr> <tr> <td data-bbox="1068 1146 1216 1421">changed</td> <td data-bbox="1216 1146 1362 1421">boolean</td> <td data-bbox="1362 1146 1507 1421">Indicates whether the status changed.</td> </tr> </tbody> </table>	Name	Type	Description	name	string	The name of the indicator.	status	NORMAL   WARNING   CRITICAL	Description of the status.	changed	boolean	Indicates whether the status changed.
Name	Type	Description												
name	string	The name of the indicator.												
status	NORMAL   WARNING   CRITICAL	Description of the status.												
changed	boolean	Indicates whether the status changed.												



## renameDirectory(src, dest)

### Parameters:

Name	Type	Description
src	string	The absolute source path on the server identifying the directory we want to rename.
dest	string	The absolute destination path on the server specifying the target path and directory name.

## renameFile(src, dest)

### Parameters:

Name	Type	Description
src	string	The absolute source path on the server identifying the file we want to rename.
dest	string	The absolute destination path on the server specifying the target path and file name.

## ResolutionErrorCode

The ResolutionError code enums available in the DCV module

- INVALID\_ARGUMENT
- NO\_CHANNEL
- NOT\_IMPLEMENTED

**Type:**

- number

**retrieveFile(path)****Parameters:**

Name	Type	Description
path	string	The absolute path on the server identifying the file we want to download locally.

**screenshotCallback(screenshot)**

The callback function to be called when a screenshot is available.

**Parameters:**

Name	Type	Description
screenshot	byte[]	Screenshot buffer in PNG format, or null if screenshot retrieval failed.

**ScreenshotErrorCode**

The ScreenshotError code enums available in the DCV module

- NO\_CHANNEL
- GENERIC\_ERROR

**Type:**

- number

## serverInfo

### Type:

- Object

### Properties:

Name	Type	Description												
name	string	The name of the software.												
version	Object	The software version number. <table border="1" data-bbox="1068 793 1523 1591"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>major</td> <td>number</td> <td>The major version number.</td> </tr> <tr> <td>minor</td> <td>number</td> <td>The minor version number.</td> </tr> <tr> <td>revision</td> <td>number</td> <td>The revision version number.</td> </tr> </tbody> </table>	Name	Type	Description	major	number	The major version number.	minor	number	The minor version number.	revision	number	The revision version number.
Name	Type	Description												
major	number	The major version number.												
minor	number	The minor version number.												
revision	number	The revision version number.												
os	string	The OS.												
arch	string	The architecture.												
hostname	string	The hostname.												

## stats

### Type:

- Object

### Properties:

Name	Type	Description
fps	number	The current frames per second.
traffic	number	The current traffic in bit/s.
peakTraffic	number	The peak of traffic in bit/s since the connection was established.
latency	number	The current latency in ms.
currentChannels	number	The number of channels that have been opened since the connection was established.
openedChannels	number	The number of currently opened channels.
channelErrors	number	The number of channels which have reported an error.

## storeFile(file, dir)

### Parameters:

Name	Type	Description
file	File	The file object (for more information see <a href="https://d">https://d</a> )

Name	Type	Description
		eveloper.mozilla.org/en-US/docs/Web/API/File) we want to upload to the server.
dir	string	The absolute path on the server where we want to upload the file.

## TimezoneRedirectionErrorCode

The TimezoneRedirectionError code enums available in the DCV module

- INVALID\_ARGUMENT
- NO\_CHANNEL
- USER\_CANNOT\_CHANGE

### Type:

- number

## TimezoneRedirectionSettingCode

The TimezoneRedirectionSetting code enums available in the DCV module

- ALWAYS\_OFF
- ALWAYS\_ON
- CLIENT\_DECIDES

### Type:

- number

## TimezoneRedirectionStatusCode

The TimezoneRedirectionStatus code enums available in the DCV module

- SUCCESS
- PERMISSION\_ERROR
- GENERIC\_ERROR

**Type:**

- number

## WebcamErrorCode

The WebcamError code enums available in the DCV module

- SETTING\_WEBCAM\_FAILED
- CHANNEL\_NOT\_AVAILABLE

**Type:**

- number

## Connection Class

The Connection Class obtained by calling the [connect method](#) of the dcv module. For an example showing how to use it, see the [Getting started](#) section.

**Exposes**

- [Methods](#)

## Methods

**List**

- [attachDisplay\(win, displayConf\) → {Promise.<number>|Promise.<{code: MultiMonitorErrorCode, message: string}>}](#)
- [captureClipboardEvents\(enabled, win, displayId\) → {void}](#)
- [detachDisplay\(displayId\) → {void}](#)
- [disconnect\(\) → {void}](#)

- [disconnectCollaborator\(connectionId\) → {void}](#)
- [enableDisplayQualityUpdates\(enable\) → {void}](#)
- [enableHighPixelDensity\(enable\) → {void}](#)
- [enableTimezoneRedirection\(enable\) → {Promise|Promise.<{code: TimezoneRedirectionErrorCode, message: string}>}](#)
- [enterRelativeMouseMode\(\) → {void}](#)
- [getConnectedDevices\(\) → {Promise.<Array.<MediaDeviceInfo>>|Promise.<{message: string}>}](#)
- [getFileExplorer\(\) → {Promise.<filestorage>|Promise.<{code: ChannelErrorCode, message: string}>}](#)
- [getServerInfo\(\) → {serverInfo}](#)
- [getScreenshot\(\) → {Promise|Promise.<{code: ScreenshotErrorCode, message: string}>}](#)
- [getStats\(\) → {stats}](#)
- [latchModifierKey\(key, location, isDown\) → {boolean}](#)
- [openChannel\(name, authToken, callbacks, namespace\) → {Promise|Promise.<{code: ChannelErrorCode, message: string}>}](#)
- [queryFeature\(featureName\) → {Promise.<{enabled: boolean, remote?: string, autoCopy?: boolean, autoPaste?: boolean, serviceStatus?: string, available?: boolean}>|Promise.<{message: string}>}](#)
- [registerKeyboardShortcuts\(shortcuts\) → {void}](#)
- [requestDisplayConfig\(highColorAccuracy\) → {Promise|Promise.<{code: DisplayConfigErrorCode, message: string}>}](#)
- [requestDisplayLayout\(layout\) → {Promise|Promise.<{code: ResolutionErrorCode, message: string}>}](#)
- [requestResolution\(width, height\) → {Promise|Promise.<{code: ResolutionErrorCode, message: string}>}](#)
- [sendKeyboardEvent\(event\) → {boolean}](#)
- [sendKeyboardShortcut\(shortcut\) → {void}](#)
- [setDisplayQuality\(min, maxopt\) → {void}](#)
- [setDisplayScale\(scaleRatio, displayId\) → {Promise|Promise.<{code: ResolutionErrorCode, message: string}>} \(DEPRECATED\)](#)
- [setKeyboardQuirks\(quirks\) → {void}](#)
- [setMaxDisplayResolution\(maxWidth, maxHeight\) → {void}](#)

- [setMicrophone\(enable\)](#) → {Promise|Promise.<{code: AudioErrorCode, message: string}>}
- [setMinDisplayResolution\(minWidth, minHeight\)](#) → {void}
- [setUploadBandwidth\(value\)](#) → {number}
- [setVolume\(volume\)](#) → {void}
- [setMicrophone\(enable, deviceId\)](#) → {Promise|Promise.<{code: AudioErrorCode, message: string}>}
- [setWebcam\(enable, deviceId\)](#) → {Promise|Promise.<{code: WebcamErrorCode, message: string}>}
- [syncClipboards\(\)](#) → {boolean}

**[attachDisplay\(win, displayConf\)](#) → {Promise.<number>|Promise.<{code: MultiMonitorErrorCode, message: string}>}**

Attaches a specific display to a window. You can't attach the main display. If successful, the function returns the `displayId`.

#### Parameters:

Name	Type	Description												
<code>win</code>	Object	The window to which the display must be attached.												
<code>displayConf</code>	Object	The configuration of the display. <table border="1" data-bbox="1068 1329 1528 1879"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Attributes</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><code>displayId</code></td> <td>number</td> <td>&lt;optional&gt;</td> <td>The ID of the display.</td> </tr> <tr> <td><code>displayName</code></td> <td></td> <td></td> <td>The name of</td> </tr> </tbody> </table>	Name	Type	Attributes	Description	<code>displayId</code>	number	<optional>	The ID of the display.	<code>displayName</code>			The name of
Name	Type	Attributes	Description											
<code>displayId</code>	number	<optional>	The ID of the display.											
<code>displayName</code>			The name of											



Name	Type	Description			
		Name	Type	Attributes	Description
					the display div.

**Returns:**

Promise. If rejected, the promise returns an error object.

Type

Promise.<number> | Promise.<{code: [MultiMonitorErrorCode](#), message: string}>

**captureClipboardEvents(enabled, win, displayId) → {void}**

Starts or stops listening to copy-paste events. In the case of interactive clipboards (always in the case of paste) we need to start listening to the copy/paste events. It could be useful to start and stop listening only when it is needed, for example, when a modal is shown.

**Parameters:**

Name	Type	Attributes	Description
enabled	boolean		To start listening to events, specify <code>true</code> . To stop listening to events, specify <code>false</code> .
win	Object	<optional>	The window in which to listen for events. If omitted, the default window is used.

Name	Type	Attributes	Description
displayId	number	<optional>	The ID of the display that should listen the events. If omitted, the default display of the window is used.

**Returns:**

Type

void

**detachDisplay(displayId) → {void}**

Detaches a specific display. The main display cannot be detached.

**Parameters:**

Name	Type	Description
displayId	number	The ID of the display to detach.

**Returns:**

Type

void

**disconnect() → {void}**

Disconnects from the Amazon DCV server and closes the connection.

**Returns:**

Type

void

**disconnectCollaborator(connectionId) → {void}**

Requests disconnect of collaborator connected with the provided connection id (since Amazon DCV Web Client SDK version 1.1.0).

**Parameters:**

Name	Type	Description
connectionId	boolean	The id of the connection that will be disconnected.

**Returns:**

Type

void

**enableDisplayQualityUpdates(enable) → {void}**

Enables or disables display quality updates for streaming areas that do not receive updates. Disabling display quality updates reduces bandwidth usage, but it also decreases the display quality.

**Parameters:**

Name	Type	Description
enable	boolean	To enable display quality updates, specify true. To disable display quality updates, specify false.

**Returns:**

Type

void

**enableHighPixelDensity(enable) → {void}**

Enables or disables high pixel density on the client.

**Parameters:**

Name	Type	Description
enable	boolean	Whether or not high pixel density should be enabled.

**Returns:**

Type

void

**enableTimezoneRedirection(enable) → {Promise|Promise.<{code: [TimezoneRedirectionErrorCode](#), message: string}>}**

Enables or disables timezone redirection. Once it is enabled, the client requests the server to make the server desktop timezone match the client timezone.

**Parameters:**

Name	Type	Description
enable	boolean	To enable timezone redirection, specify true. To disable timezone redirection, specify false.

**Returns:**

Promise. If rejected, the promise returns an error object.

Type

Promise.<number> | Promise.<{code: [TimezoneRedirectionErrorCode](#), message: string}>

**enterRelativeMouseMode() → {void}**

Enables relative mouse mode.

**Returns:**

Type

void

**getConnectedDevices() → {Promise.<Array.<MediaDeviceInfo>>| Promise.<{message: string}>>}**

Requests a list of the media devices connected to the client computer.

**Returns:**

If successful, it returns a Promise that resolves to an array of MediaDeviceInfo objects. For more information, see <https://developer.mozilla.org/en-US/docs/Web/API/MediaDeviceInfo>. If rejected, the promise returns an error object.

Type

Promise.<Array.<MediaDeviceInfo>> | Promise.<{message: string}>

**getFileExplorer() → {Promise.<[filestorage](#)>|Promise.<{code: [ChannelErrorCode](#), message: string}>>}**

Gets an object to manage the Amazon DCV server's file storage.

**Returns:**

Promise. Resolves to the file explorer object if fulfilled, or an error object if rejected.

## Type

Promise.<[filestorage](#)> | Promise.<{code: [ChannelErrorCode](#), message: string}>

### **getServerInfo()** → **{[serverInfo](#)}**

Gets information about the Amazon DCV server.

#### **Returns:**

Information about the server software.

## Type

[serverInfo](#)

### **getScreenshot()** → **{Promise|Promise.<{code: [ScreenshotErrorCode](#), message: string}>}**

Retrieves the screenshot of the remote desktop in PNG format. The screenshot will be returned in the [screenshotCallback](#) observer. null will be returned instead in case of failures.

#### **Returns:**

Promise that resolves if the request is processed. If rejected we receive an error object.

## Type

Promise | Promise.<{code: [ScreenshotErrorCode](#), message: string}>

### **getStats()** → **{[stats](#)}**

Gets statistics about the Amazon DCV server.

#### **Returns:**

Information about the streaming statistics.

## Type

[stats](#)

**latchModifierKey(key, location, isDown) → {boolean}**

Sends a single keyboard keydown or keyup event for an allowed modifier.

**Parameters:**

Name	Type	Description
key	Control   Alt   AltGraph   Meta   OS   Shift	The key to send.
location	KeyboardEvent.location	The key's location. For more information, see <a href="https://developer.mozilla.org/en-US/docs/Web/API/KeyboardEvent/location">https://developer.mozilla.org/en-US/docs/Web/API/KeyboardEvent/location</a> .
isDown	boolean	If the key event to inject is a keydown (true) or a keyup (false).

**Returns:**

If the requested combination is valid, the function returns `true`, otherwise it returns `false`.

Type

boolean

**openChannel(name, authToken, callbacks, namespace) → {Promise} Promise.<{code: [ChannelErrorCode](#), message: string}>>**

Opens a custom data channel on the connection if it was created on the Amazon DCV Server.

**Parameters:**

Name	Type	Description
name	string	The name of the channel.

Name	Type	Description
authToken	string	The authentication token to use to connect to the channel.
callbacks	Object	The onMessage and onClose callbacks functions to call.
namespace	string	The namespace of the channel. Available since Amazon DCV Web Client SDK 1.2.0 and Amazon DCV Server 2022.1.

**Returns:**

Promise. If rejected we receive an error object.

Type

Promise | Promise.<{code: [ChannelErrorCode](#), message: string}>

**queryFeature(featureName) → {Promise.<{enabled: boolean, remote?: string, autoCopy?: boolean, autoPaste?: boolean, serviceStatus?: string, available?: boolean}>|Promise.<{message: string}>}**

Queries the status of a specific Amazon DCV server feature.

**Parameters:**

Name	Type	Description
featureName	<a href="#">feature</a>	The name of the feature to query.



**Returns:**

Promise. If resolved, the function returns a status object that always contains an `enabled` property, and possibly also other properties. If rejected, the function returns an `error` object.

**Type**

```
{Promise.<{enabled: boolean, remote?: string, autoCopy?: boolean, autoPaste?: boolean,
serviceStatus?: string, available?: boolean}> | Promise.<{message: string}>
```

**registerKeyboardShortcuts(shortcuts) → {void}**

Registers keyboard shortcuts.

**Parameters:**

Name	Type	Description												
shortcuts	Array.<Object>	The array of keys and mappings to register. <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>sequence</td> <td>Array.&lt;Object&gt;</td> <td>The keyboard shortcut to register.</td> </tr> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> <tr> <td>keyCode</td> <td>KeyboardEvent.keyCode</td> <td>The numeric value of the key</td> </tr> </tbody> </table>	Name	Type	Description	sequence	Array.<Object>	The keyboard shortcut to register.	Name	Type	Description	keyCode	KeyboardEvent.keyCode	The numeric value of the key
Name	Type	Description												
sequence	Array.<Object>	The keyboard shortcut to register.												
Name	Type	Description												
keyCode	KeyboardEvent.keyCode	The numeric value of the key												

Name	Type	Description		
		Name	Type	Description
				<p data-bbox="1382 352 1620 1507">           pressed by the user. For more information, see <a href="https://ddeveloper.mozilla.org/en-US/docs/Web/API/KeyboardEvent/key">https://ddeveloper.mozilla.org/en-US/docs/Web/API/KeyboardEvent/key</a>.         </p> <p data-bbox="1382 1549 1620 1877">           The <code>KeyboardEvent</code> object is created by the browser to send. The         </p>

Name	Type	Description		
		Name	Type	Description
				<p data-bbox="1382 352 1523 457">Name</p> <p data-bbox="1382 457 1523 562">Type</p> <p data-bbox="1382 562 1523 667">Description</p> <p data-bbox="1382 667 1523 772">location of the key on the keyboard. For more information, see <a href="https://ddeveloper.mozilla.org/en-US/docs/Web/API/KeyboardEvent/location">https://ddeveloper.mozilla.org/en-US/docs/Web/API/KeyboardEvent/location</a>.</p>
		output	Array.<Object>	The intended action

Name	Type	Description		
		Name	Type	Description
				<p>to be performed by the shortcut.</p>
				<p><b>N T Description</b></p> <p>k K The value of the key pressed by the user. For more information, see <a href="https://d.eveloper.mozilla.org/en-US/docs/Web/API/">https://d.eveloper.mozilla.org/en-US/docs/Web/API/</a></p>

Name	Type	Description		
		Name	Type	Description
				<p data-bbox="1382 338 1523 443">Name</p> <p data-bbox="1382 443 1523 611">KeyboardEvent/ key.</p> <p data-bbox="1382 611 1523 653">1</p> <p data-bbox="1382 653 1523 695">K</p> <p data-bbox="1382 695 1523 737">The</p> <p data-bbox="1382 737 1523 779">v</p> <p data-bbox="1382 779 1523 821">t</p> <p data-bbox="1382 821 1523 863">of</p> <p data-bbox="1382 863 1523 905">keys</p> <p data-bbox="1382 905 1523 947">to</p> <p data-bbox="1382 947 1523 989">send.</p> <p data-bbox="1382 989 1523 1031">The</p> <p data-bbox="1382 1031 1523 1073">location</p> <p data-bbox="1382 1073 1523 1115">of</p> <p data-bbox="1382 1115 1523 1157">the</p> <p data-bbox="1382 1157 1523 1199">key</p> <p data-bbox="1382 1199 1523 1241">on</p> <p data-bbox="1382 1241 1523 1283">the</p> <p data-bbox="1382 1283 1523 1325">keyboard.</p> <p data-bbox="1382 1325 1523 1367">For</p> <p data-bbox="1382 1367 1523 1409">more</p> <p data-bbox="1382 1409 1523 1451">informati</p> <p data-bbox="1382 1451 1523 1493">on,</p> <p data-bbox="1382 1493 1523 1535">see</p> <p data-bbox="1382 1535 1523 1577"><a 751="" 771"="" 851="" 938="" href="https://d&lt;/a&gt;&lt;/p&gt; &lt;p data-bbox=">d</a></p> <p data-bbox="1382 1619 1523 1661">eveloper.</p> <p data-bbox="1382 1661 1523 1703">mozilla.o</p> <p data-bbox="1382 1703 1523 1745">rg/</p> <p data-bbox="1382 1745 1523 1787">en-</p> <p data-bbox="1382 1787 1523 1829">US/</p>

Name	Type	Description						
		<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>docs/ Web/ API/ Keybo ardEvent/ location.</td> </tr> </tbody> </table>	Name	Type	Description			docs/ Web/ API/ Keybo ardEvent/ location.
Name	Type	Description						
		docs/ Web/ API/ Keybo ardEvent/ location.						

**Returns:**

Type

void

**requestDisplayConfig(highColorAccuracy) → {Promise|Promise.<{code: [DisplayConfigErrorCode](#), message: string}>}**

Requests an updated display config from the Amazon DCV Server. Available since Amazon DCV Web Client SDK 1.1.0 and Amazon DCV Server 2022.0.

**Parameters:**

Name	Type	Description
highColorAccuracy	boolean	Whether or not high color accuracy should be requested.

**Returns:**

Promise. If rejected, the promise returns an error object.

## Type

Promise | Promise.<{code: [DisplayConfigErrorCode](#), message: string}>

**requestDisplayLayout(layout) → {Promise|Promise.<{code: [ResolutionErrorCode](#), message: string}>>}**

Requests an updated display layout for the connection.

### Parameters:

Name	Type	Description
layout	Array.< <a href="#">Monitor</a> >	The requested displays in the layout.

### Returns:

Promise. If rejected we receive an error object.

## Type

Promise | Promise.<{code: [ResolutionErrorCode](#), message: string}>

**requestResolution(width, height) → {Promise|Promise.<{code: [ResolutionErrorCode](#), message: string}>>}**

Requests an updated display resolution from the Amazon DCV server.

### Parameters:

Name	Type	Description
width	number	The width to request in pixels. The minimum allowed value is 0.

Name	Type	Description
height	number	The height to request in pixels. The minimum allowed value is 0.

**Returns:**

Promise. If rejected, the promise returns an error object.

## Type

Promise | Promise.<{code: [ResolutionErrorCode](#), message: string}>

**sendKeysKeyboardEvent(event) → {boolean}**

Sends a keyboard shortcut event. For more information about keyboard events, see <https://developer.mozilla.org/en-US/docs/Web/API/KeyboardEvent>. Valid Keyboard events include: keydown, keypress, and keyup. For more information about these events, see <https://developer.mozilla.org/en-US/docs/Web/API/KeyboardEvent#events>.

**Parameters:**

Name	Type	Description
event	KeyboardEvent	The keyboard event to send.

**Returns:**

If the event is not valid, the function returns `false`. If the event is valid, the function returns `true`.

## Type

boolean



**sendKeysShortcut(shortcut) → {void}**

Sends a keyboard shortcut. Use this function to send a full keydown or keyup sequence. For example, sending Ctrl + Alt + Del sends the keydown events for all the keys followed by the keyup events. Use this function even if you want to send a single key.

**Parameters:**

Name	Type	Description						
shortcut	Array.<Object>	The array of keys to send. <table border="1" data-bbox="1068 701 1523 1841"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>key</td> <td>KeyboardEvent.key</td> <td>The value of the key pressed by the user. For more information, see <a href="https://developer.mozilla.org/en-US/docs/Web/API/Keyboard">https://developer.mozilla.org/en-US/docs/Web/API/Keyboard</a></td> </tr> </tbody> </table>	Name	Type	Description	key	KeyboardEvent.key	The value of the key pressed by the user. For more information, see <a href="https://developer.mozilla.org/en-US/docs/Web/API/Keyboard">https://developer.mozilla.org/en-US/docs/Web/API/Keyboard</a>
Name	Type	Description						
key	KeyboardEvent.key	The value of the key pressed by the user. For more information, see <a href="https://developer.mozilla.org/en-US/docs/Web/API/Keyboard">https://developer.mozilla.org/en-US/docs/Web/API/Keyboard</a>						

Name	Type	Description		
		Name	Type	Description
				ardEvent/ key.
		location	KeyboardEvent.location	The array of keys to send. The location of the key on the keyboard. For more information, see <a href="https://developer.mozilla.org/en-US/docs/Web/API/KeyboardEvent/location">https://developer.mozilla.org/en-US/docs/Web/API/KeyboardEvent/location</a> .

**Returns:**

Type

void

**setDisplayQuality(min, maxopt) → {void}**

Sets the image quality to use for the connection. Valid range is 0 to 100, with 1 being the lowest image quality and 100 being the highest image quality. Specify 0 to retain the current value.

**Parameters:**

Name	Type	Attributes	Description
min	number		The minimum image quality.
max	number	<optional>	The maximum image quality.

**Returns:**

Type

void

**setDisplayScale(scaleRatio, displayId) → {Promise|Promise.<{code: [ResolutionErrorCode](#), message: string}>}** (DEPRECATED)

Deprecated since version 1.3.0. There is no need to set the display scale anymore. Mouse coordinates will be managed automatically internally.

Notifies the Amazon DCV that the display is scaled on the client side. Use this to notify the server that it needs to scale mouse events to match the client's display ratio.

**Parameters:**

Name	Type	Description
scaleRatio	float	The scaling ratio to use. Must be a strictly positive number.
displayId	number	The ID of the display to scale.

**Returns:**

Promise. If rejected, the promise returns an error object.

Type

Promise | Promise.<{code: [ResolutionErrorCode](#), message: string}>

**setKeyboardQuirks(quirks) → {void}**

Sets keyboard quirks for the client computer.

**Parameters:**

Name	Type	Description						
quirks	Object	The keyboard quirks to enable or disable. <table border="1" data-bbox="1068 1459 1523 1879"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>macOptiToAlt</td> <td>boolean</td> <td>To map the Option key to Alt for</td> </tr> </tbody> </table>	Name	Type	Description	macOptiToAlt	boolean	To map the Option key to Alt for
Name	Type	Description						
macOptiToAlt	boolean	To map the Option key to Alt for						

Name	Type	Description		
		Name	Type	Description
				macOS, specify true. Otherwise, specify false.
		macCommandToControl	boolean	To map the Command key to Ctrl for macOS, specify true. Otherwise, specify false.

**Returns:**

Type

void

**setMaxDisplayResolution(maxWidth, maxHeight) → {void}**

Sets the maximum display resolution to use for the connection.

**Parameters:**

Name	Type	Description
maxWidth	number	The maximum display width in pixels. The minimum allowed value is 0.
maxHeight	number	The maximum display height in pixels. The minimum allowed value is 0.

**Returns:**

Type

void

**setMicrophone(enable) → {Promise|Promise.<{code: [AudioErrorCode](#), message: string}>}**

Enables or disables the microphone.

**Parameters:**

Name	Type	Description
enable	boolean	To enable the microphone, specify <code>true</code> . To disable the microphone, specify <code>false</code> .

**Returns:**

Promise. If rejected, the promise returns an error object.

Type

Promise | Promise.<{code: [AudioErrorCode](#), message: string}>

## **setMinDisplayResolution(minWidth, minHeight) → {void}**

Sets the minimum display resolution to use for the connection. Some applications might require a minimum display resolution. If the minimum required resolution is larger than the maximum resolution supported by the client, a resize strategy is used. Use this function carefully. The resize strategy could cause a less precise mouse and touch input system.

### **Parameters:**

<b>Name</b>	<b>Type</b>	<b>Description</b>
minWidth	number	The minimum display width in pixels. The minimum allowed value is 0.
minHeight	number	The minimum display height in pixels. The minimum allowed value is 0.

### **Returns:**

Type

void

## **setUpUploadBandwidth(value) → {number}**

Sets the maximum bandwidth to use for uploading files to the Amazon DCV server.

### **Parameters:**

<b>Name</b>	<b>Type</b>	<b>Description</b>
value	number	The maximum bandwidth limit in kbps. Valid range is 1024 kbps to 102400 kbps.

**Returns:**

- The set bandwidth limit. `null` if the file storage feature is disabled on the server.

## Type

number

**setVolume(volume) → {void}**

Sets the volume level to use for audio. Valid range is 0 to 100, with 0 being the lowest volume and 100 being the highest volume.

**Parameters:**

Name	Type	Description
volume	number	The volume level to use.

**Returns:**

## Type

void

**setMicrophone(enable, deviceId) → {Promise|Promise.<{code: [AudioErrorCode](#), message: string}>}**

[Experimental - might change in the future] Enables or disables the microphone.

**Parameters:**

Name	Type	Description
enable	boolean	To enable the microphone, specify <code>true</code> . To disable the microphone, specify <code>false</code> .



Name	Type	Description
deviceId	string	The device ID of the microphone. If no deviceId is provided, the default deviceId is used.

**Returns:**

Promise. If rejected, the promise returns an error object.

## Type

Promise | Promise.<{code: [AudioErrorCode](#), message: string}>

**setWebcam(enable, deviceId) → {Promise|Promise.<{code: [WebcamErrorCode](#), message: string}>}**

Enables or disables the webcam.

**Parameters:**

Name	Type	Description
enable	boolean	To enable the webcam, specify true. To disable the webcam, specify false.
deviceId	string	The device ID of the webcam.

**Returns:**

Promise that, if successful, resolves to the attached/detached webcam deviceId. If rejected, the promise returns an error object.

## Type

Promise.<string> | Promise.<{code: [WebcamErrorCode](#), message: string}>

## **syncClipboards() → {boolean}**

Synchronizes the local client clipboard with the remote Amazon DCV server clipboard. Autocopy must be supported by the browser.

### **Returns:**

If the clipboards have been synchronized, the function returns `true`. If the clipboards have not been synchronized, or if the browser does not support autocopy, the function returns `false`.

### Type

boolean

## **Authentication Class**

The Authentication Class must be used to obtain an authentication token by calling the [authenticate method](#) of the `dcv` module. For an example showing how to use it, see the [Getting started](#) section.

### **Exposes**

- [Methods](#)

## **Methods**

### **List**

- [retry\(\) → {void}](#)
- [sendCredentials\(credentials\) → {void}](#)

## **retry() → {void}**

Retries the authentication process.

### **Returns:**

### Type

void

## **sendCredentials(credentials) → {void}**

Sends the authentication credentials provided by the client to the Amazon DCV server.

### **Parameters:**

<b>Name</b>	<b>Type</b>	<b>Description</b>
credentials	Object	The object containing the supplied credentials. The credentials must have the same name and be of the same type that is specified in the challenge.

### **Returns:**

Type

void

## **Resource Class**

The Resource Class can fetch or discard the corresponding file that was just printed or downloaded. When performing these actions, the corresponding observer functions [filePrinted](#) and [fileDownload](#) would respectively be invoked with the resource object as their only argument. Such resource can be accepted or declined in order to fetch or discard the file they reference.

### **Exposes**

- [Methods](#)

## **Methods**

### **List**

- [accept\(urlParameters\) → {void}](#)
- [decline\(\) → {void}](#)

## **accept(urlParameters) → {void}**

Locally downloads the resource.

### **Parameters:**

<b>Name</b>	<b>Type</b>	<b>Description</b>
<code>urlParameters</code>	Object	The optional object containing the key/value pairs of the URL search parameters passed to the request to fetch the resource.

### **Returns:**

Type

`void`

## **decline() → {void}**

Discards the resource.

### **Returns:**

Type

`void`

## **Amazon DCV Web UI SDK**

A JavaScript React component library, currently exporting a single React component called `DCVViewer` which connects to the Amazon DCV Server and renders the toolbar to interact with the remote stream.

### **Exposes**

- [Components](#)

## Components

### List

- [DCVViewer](#)

### DCVViewer

The React component rendering the toolbar with all of its functionalities useful to interact with the remote stream.

### Properties:

#### List

- [dcv](#)
- [uiConfig](#)

#### dcv

Name	Type	Required	Description
dcv	Object	Yes	The object defining the properties necessary to establish the connection to the Amazon DCV Server, setting the log level and the URL from where to load the Amazon DCV Web Client SDK assets and access the DCV resources.

Name	Type	Required	Description			
			Name	Type	Req	Description
			ses	Strir	Yes	The Amazon DCV session ID.
			aut	Strir	Yes	The authentication token to use when connecting to the server.
			ser	Strir	Yes	The host name and port of the running Amazon DCV server in the

Name	Type	Required	Description			
			Name	Type	Req	Description
						following format: https:// d cv_host_a dddress:po rt. For example: https:// m y- dcv- ser ver:8443.
			base	String	Yes	The absolute or relative URL from which to load SDK files.
			base	String	No (default)	The absolute or relative URL

Name	Type	Required	Description			
			Name	Type	Req	Description
						<p>from which to access DCV resources .</p>
			onDisconnect	function	No (default => {})	<p>The callback function invoked when disconnecting from the Amazon DCV server, and the connection is closed.</p>
			log	<a href="#">LogLevel</a>	No (default: INFO)	<p>The log level . to use in</p>



Name	Type	Required	Description								
			<table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Req</th> <th>Descripti on</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td>the viewer.</td> </tr> </tbody> </table>	Name	Type	Req	Descripti on				the viewer.
Name	Type	Req	Descripti on								
			the viewer.								

### uiConfig

Name	Type	Required	Description								
uiConfig	Object	No (default: {})	<p>The object defining the properties to configure whether the toolbar is visible and whether to display the fullscreen and multimonitor buttons on it.</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Type</th> <th>Req</th> <th>Descripti on</th> </tr> </thead> <tbody> <tr> <td>too</td> <td>Objε</td> <td>No</td> <td>The (def Object {}) defining the configura tion options for the toolbar.</td> </tr> </tbody> </table>	Name	Type	Req	Descripti on	too	Objε	No	The (def Object {}) defining the configura tion options for the toolbar.
Name	Type	Req	Descripti on								
too	Objε	No	The (def Object {}) defining the configura tion options for the toolbar.								

Name	Type	Required	Description
			<p><b>Navbar</b> <b>Type:</b> <code>boolean</code> <b>Required:</b> <code>false</code> <b>Description:</b> Whether to show or hide the toolbar.</p> <p><b>Fullscreen</b> <b>Type:</b> <code>boolean</code> <b>Required:</b> <code>false</code> <b>Description:</b> Whether to show or hide the fullscreen button on the toolbar.</p>



# Release Notes and Document History for Amazon DCV Web Client SDK

This page provides the release notes and document history for Amazon DCV Web Client SDK.

## Topics

- [Amazon DCV Web Client SDK Release Notes](#)
- [Document History](#)

## Amazon DCV Web Client SDK Release Notes

This section provides release notes for the Amazon DCV Web Client SDK by release date.

## Topics

- [1.8.7 — October 31, 2024](#)
- [1.8.4 — October 1, 2024](#)
- [1.5.10 — December 19, 2023](#)
- [1.5.6 — November 9, 2023](#)
- [1.4.4 — June 29, 2023](#)
- [1.4.0 — March 28, 2023](#)
- [1.3.1 — December 9, 2022](#)
- [1.3.0 — November 11, 2022](#)
- [1.2.1 — July 21, 2022](#)
- [1.2.0 — June 29, 2022](#)
- [1.1.3 — May 23, 2022](#)
- [1.1.2 — May 19, 2022](#)
- [1.1.1 — March 23, 2022](#)
- [1.1.0 — February 23, 2022](#)
- [1.0.4 — December 20, 2021](#)
- [1.0.3 — September 01, 2021](#)
- [1.0.2 — July 30, 2021](#)

- [1.0.1 — May 31, 2021](#)
- [1.0.0 — March 24, 2021](#)

## 1.8.7 — October 31, 2024

Build numbers	Changes and bug fixes
<ul style="list-style-type: none"> <li>• Semantic version: 1.8.7</li> <li>• Build: 858</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed rendering on Firefox 130 and newer</li> </ul>

## 1.8.4 — October 1, 2024

Build numbers	New features	Changes and bug fixes
<ul style="list-style-type: none"> <li>• Semantic version: 1.8.4</li> <li>• Build: 840</li> </ul>	<p>The following features were added:</p> <ul style="list-style-type: none"> <li>• Renamed to “Amazon DCV Web Client SDK”</li> <li>• Added new API enableHighPixelDensity for high dpi displays</li> <li>• Added an experimental API setMicrophone to select the microphone in compatible browsers</li> <li>• Added new Connection Errors GATEWAY_USY, UNSUPPORTED_CREDENTIAL, and TRANSPORT_ERROR</li> </ul>	<ul style="list-style-type: none"> <li>• Improved Webcam handling</li> <li>• Improved audio playback handling</li> <li>• Improved WebCodecs handling</li> <li>• Improved plug and unplug of microphone and webcam</li> <li>• Improved remote window dragging when multimonitor</li> </ul>

Build numbers	New features	Changes and bug fixes
	Added new Closing Reasons EXTERNAL_PROTOCOL_CONNECTION_EVICTED, and DISCONNECTION_REQUESTED	File storage upload and download permissions are now correctly propagated <ul style="list-style-type: none"> <li>Minor fixes on rendering</li> </ul>

## 1.5.10 — December 19, 2023

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.5.10</li> <li>Build: 684</li> </ul>	Changes and bug fixes <ul style="list-style-type: none"> <li>Fix stream decoding errors</li> </ul>

## 1.5.6 — November 9, 2023

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.5.6</li> <li>Build: 659</li> </ul>	Changes and bug fixes <ul style="list-style-type: none"> <li>Performance improvements in the stream decoding and rendering</li> <li>Removed support for Internet Explorer 11</li> </ul>

## 1.4.4 — June 29, 2023

Version	Release notes
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Version	Release notes
<ul style="list-style-type: none"> <li>• Semantic version: 1.4.4</li> <li>• Build: 573</li> </ul>	<p>Changes and bug fixes</p> <ul style="list-style-type: none"> <li>• The viewer UI component now uses the <code>navigator.keyboard.lock</code> API on browsers that support it to handle special keys in full screen.</li> <li>• Fixed a problem which could cause wrong colors when using Chrome 114 or newer.</li> <li>• Improved WebCodecs detection.</li> <li>• Fixed a problem with the mouse button state when entering the window.</li> <li>• Fixed a problem which could cause the modifier keys to remain pressed on macOS.</li> <li>• Improved audio robustness to degraded network conditions.</li> <li>• Fixed memory leaks.</li> <li>• Improved logs to include time and level.</li> </ul>

## 1.4.0 — March 28, 2023

Version	Release notes
<ul style="list-style-type: none"> <li>• Semantic version: 1.4.0</li> <li>• Build: 476</li> </ul>	<p>New features</p> <ul style="list-style-type: none"> <li>•</li> </ul>

Version	Release notes
	<p>Added a new <code>uploadFiles</code> method to the <code>FileStorage</code> object to upload multiple files.</p> <ul style="list-style-type: none"><li>• The viewer UI component now supports drag and drop to initiate file upload.</li><li>• The WebCodecs browser API is now used also for audio and webcam.</li></ul> <p>Changes and bug fixes</p> <ul style="list-style-type: none"><li>• Fixed memory leaks related to repeated connections from the same page.</li><li>• <code>setUploadBandwidth</code> now allows values up to 1 Gbps.</li><li>• Optimized rendering of UI components.</li><li>• Fixed support for animated cursors on Windows.</li><li>• Fixed a problem with clipboard support when both text and image data are present for the same operation.</li><li>• Improved robustness of the Webcam API: settings cannot be changed while a request is already in progress, <code>webcam.setEnabled</code> now keeps track of device ID for the request is in progress and returns a</li></ul>



Version	Release notes
	Promise. The viewer UI component shows notification in case of error.

## 1.3.1 — December 9, 2022

Version	Release notes
<ul style="list-style-type: none"><li>Semantic version: 1.3.1</li><li>Build: 413</li></ul>	<p>Changes and bug fixes</p> <ul style="list-style-type: none"><li>Fixed a problem which could cause the Time Zone redirection UI to go out of synchronization with the server.</li><li>Fixed a memory leak after multiple reconnections.</li><li>Fixed a problem which caused a blank page on disconnection.</li><li>Fixed a bug causing console warnings on audio decoder close.</li></ul>

## 1.3.0 — November 11, 2022

Version	Release notes
<ul style="list-style-type: none"><li>Semantic version: 1.3.0</li><li>Build: 407</li></ul>	<p>New features</p> <ul style="list-style-type: none"><li>Adopted Cloudscape (<a href="https://cloudscape.design">https://cloudscape.design</a>) for the UI Viewer component.</li><li>Added support for Time Zone redirection.</li></ul>

Version	Release notes
	<p>Changes and bug fixes</p> <ul style="list-style-type: none"><li>• Fixed missing update on asynchronous clipboard when the DCV viewer is focused.</li><li>• The <code>setDisplayScale</code> function is not needed anymore when scaling the display on client side.</li><li>• The <code>DCVViewer</code> component now automatically calls <code>disconnect()</code> when it is unmounted.</li></ul>

## 1.2.1 — July 21, 2022

Version	Release notes
<ul style="list-style-type: none"><li>• Semantic version: 1.2.1</li><li>• Build: 358</li></ul>	<p>Changes and bug fixes</p> <ul style="list-style-type: none"><li>• Fixed a problem that resulted in a failure to connect to Amazon DCV server 2019.1 and older.</li></ul>

## 1.2.0 — June 29, 2022

Version	Release notes
<ul style="list-style-type: none"><li>• Semantic version: 1.2.0</li><li>• Build: 352</li></ul>	<p>Changes and bug fixes</p> <ul style="list-style-type: none"><li>•</li></ul>

Version	Release notes
	<p>Fixed crashing bug when the frames received are larger than the maximum supported resolution (4096x2160).</p> <ul style="list-style-type: none"> <li>Resource objects (passed as arguments to <code>fileDownload</code> and <code>filePrinted</code> observers) now have the <code>accept</code> and <code>decline</code> methods that can be called on the object to download and discard the resource respectively.</li> <li>Minor bug fix on automatic clipboard synchronization when disconnecting.</li> </ul>

### 1.1.3 — May 23, 2022

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.1.3</li> <li>Build: 329</li> </ul>	<p>Changes and bug fixes</p> <ul style="list-style-type: none"> <li>Fixed a problem preventing successful connection when specifying the <code>web-url-path</code> option.</li> </ul>

### 1.1.2 — May 19, 2022

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.1.2</li> </ul>	<p>Changes and bug fixes</p> <ul style="list-style-type: none"> <li></li> </ul>

Version	Release notes
Build: 322	Fixed a problem that could cause input to not work correctly after connection. <ul style="list-style-type: none"> <li>Fixed mouse coordinates when scale ratio is greater than 1.</li> </ul>

## 1.1.1 — March 23, 2022

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.1.1</li> <li>Build: 309</li> </ul>	Changes and bug fixes <ul style="list-style-type: none"> <li>Report <code>Transport Error</code> when communication with the server times out.</li> <li>Fixed a recurring decoding error when streaming large resolutions.</li> </ul>

## 1.1.0 — February 23, 2022

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.1.0</li> <li>Build: 295</li> </ul>	New features <ul style="list-style-type: none"> <li>Release Amazon DCV Web UI SDK library with <code>DCVViewer</code> React component.</li> <li>Export Amazon DCV Web Client SDK both as UMD and ES modules.</li> <li>Added high color accuracy support.</li> </ul>

Version	Release notes
	<ul style="list-style-type: none"> <li>Added the ability to list and interact with clients connected to a session. Added notifications for connection and disconnection.</li> </ul> <p>Changes and bug fixes</p> <ul style="list-style-type: none"> <li>Improved webcodecs decoding support.</li> <li>Various keyboard improvements.</li> <li>Fix a bug that was preventing to open a second screen when the clipboard was disabled.</li> </ul>

## 1.0.4 — December 20, 2021

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.0.4</li> <li>Build: 249</li> </ul>	<p>New features</p> <ul style="list-style-type: none"> <li>Support opening multiple connections from the same page.</li> <li>Support loading the SDK from a CDN.</li> </ul>

## 1.0.3 — September 01, 2021

Version	Release notes

Version	Release notes
<ul style="list-style-type: none"> <li>• Semantic version: 1.0.3</li> <li>• Build: 202</li> </ul>	<p>New features</p> <ul style="list-style-type: none"> <li>• Experimental support for WebCodecs. This is disabled by default and must be enabled via the <code>ConnectionConfig</code> object using the new property <code>enableWebCodecs</code> .</li> <li>• Clipboard: added support for <code>image/png</code> data type on Chromium based browsers.</li> <li>• Added observer/callback to get the server's screenshot as a PNG image (requires Amazon DCV server 2021.2).</li> </ul> <p>Changes and bug fixes</p> <ul style="list-style-type: none"> <li>• Improved handling of keyboard modifiers.</li> </ul>

## 1.0.2 — July 30, 2021

Version	Release notes
<ul style="list-style-type: none"> <li>• Semantic version: 1.0.2</li> <li>• Build: 167</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed pressure detection for stylus events.</li> <li>• Improved support for Korean keyboard layout on Chrome.</li> </ul>

## 1.0.1 — May 31, 2021

Version	Release notes

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.0.1</li> <li>Build: 141</li> </ul>	<ul style="list-style-type: none"> <li>Fixed propagation of connection errors and close reasons</li> <li>Fixed filestorage chunk progress update</li> <li>Improved webcam handling</li> <li>Improved audio-in processing</li> </ul>

## 1.0.0 — March 24, 2021

Version	Release notes
<ul style="list-style-type: none"> <li>Semantic version: 1.0.0</li> <li>Build: 81</li> </ul>	Initial release of the Amazon DCV Web Client SDK.

## Document History

The following table describes the documentation for this release of Amazon DCV Web Client SDK.

Change	Description	Date
Amazon DCV Web Client SDK version 1.8.4	Amazon DCV Web Client SDK 1.8.4 is now available. For more information, see <a href="#">SDK v.1.8.4</a> .	October 1, 2024
Amazon DCV Web Client SDK version 1.5.6	Amazon DCV Web Client SDK 1.5.6 is now available. For	November 9, 2023

Change	Description	Date
	more information, see <a href="#">SDK v.1.5.6.</a>	
Amazon DCV Web Client SDK version 1.4.4	Amazon DCV Web Client SDK 1.4.4 is now available. For more information, see <a href="#">SDK v.1.4.4.</a>	June 29, 2023
Amazon DCV Web Client SDK version 1.4.0	Amazon DCV Web Client SDK 1.4.0 is now available. For more information, see <a href="#">SDK v.1.4.0.</a>	March 28, 2023
Amazon DCV Web Client SDK version 1.3.1	Amazon DCV Web Client SDK 1.3.1 is now available. For more information, see <a href="#">SDK v.1.3.1.</a>	December 9, 2022
Amazon DCV Web Client SDK version 1.3.0	Amazon DCV Web Client SDK 1.3.0 is now available. For more information, see <a href="#">SDK v.1.3.0.</a>	November 11, 2022
Amazon DCV Web Client SDK version 1.2.0	Amazon DCV Web Client SDK 1.2.0 is now available. For more information, see <a href="#">SDK v.1.2.0.</a>	June 29, 2022
Amazon DCV Web Client SDK version 1.1.0	Amazon DCV Web Client SDK 1.1.0 is now available. For more information, see <a href="#">SDK v.1.1.0.</a>	February 23, 2022
Amazon DCV Web Client SDK version 1.0.1	Fixed some typos. Minor bugs fixed, see <a href="#">SDK v.1.0.1.</a>	May 31, 2021



<b>Change</b>	<b>Description</b>	<b>Date</b>
Initial release	First publication of this content.	March 24, 2021