aws

User Guide

Amazon WorkSpaces

Amazon WorkSpaces: User Guide

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Getting started with your WorkSpace

After your administrator creates your WorkSpace, you receive an invitation email. Complete the following tasks to start using your WorkSpace.

Tasks

- Complete your user profile

- Choose a client

- Determine your client version

- Determine your streaming protocol

- Verify networking requirements

- Save your credentials

- (Optional) Change your password

Complete your user profile

After your administrator creates your WorkSpace, you must complete your user profile within seven days; otherwise, your invitation expires. If your invitation expires, ask your administrator for another invitation.

To complete your user profile

1. Open the link in the invitation email.

2. Enter your password. Passwords are case-sensitive and must be between 8 and 64 characters in length, inclusive. Passwords must contain at least one character from each of the following categories:

   - Lowercase characters (a-z)

   - Uppercase characters (A-Z)

   - Numbers (0-9)

   - Non-alphanumeric characters (~!@#$%^&*_-+=`|\(){}[]:;"'<>,.?/)

3. Choose **Update User**.

You can change your WorkSpaces password anytime. For more information, see [(Optional) Change your password](#).

Choose a client

You can connect to your WorkSpace using the client application for a supported device or a web browser. To run the WorkSpaces client application, you must have a Windows or Linux PC, Mac, iPad, Kindle, Chromebook, or Android tablet or phone. To run WorkSpaces Web Access, you must have a Windows PC or a Mac running a Chrome or Firefox web browser, or a Linux PC running a Firefox browser.

> ⓘ **Note**
>
> Ubuntu, Rocky Linux, and Red Hat Enterprise Linux WorkSpaces currently supports Windows client application and Web Access.

For information about connecting to your WorkSpace, see the following client documentation.

- [Android Client Application](#)

- [iPad Client Application](#)

- [Linux Client Application](#)

- [macOS Client Application](#)

- [PCoIP Zero Client](#)

- [Web Access](#)

- [Windows Client Application](#)

Determine your client version

To see which version of the WorkSpaces client you have, choose **Amazon WorkSpaces**, **About Amazon WorkSpaces**, or click the gear icon in the upper-right corner and choose **About Amazon WorkSpaces**.

Determine your streaming protocol

Device or feature support might differ depending on which streaming protocol your WorkSpace is using, either PCoIP or DCV. In the 3.0+ versions of the macOS and Windows client applications, you can see which protocol your WorkSpace is using by choosing **Support**, **About My WorkSpace**. The iPad, Android, and Linux client applications currently support only the PCoIP protocol.

Verify networking requirements

To ensure a good experience with your WorkSpace, verify that your client device meets the networking requirements.

To verify networking requirements for 3.0+ clients

1. Open your WorkSpaces client. If this is the first time you have opened the client, you are prompted to enter the registration code that you received in the invitation email.

2. Depending on which client you're using, do one of the following.

If you're using…	Do this
Windows or Linux clients	In the upper-right corner of the client application, select the **Network** icon .
macOS client	Choose **Connections**, **Network**.

The client application tests the network connection, ports, and round-trip time, and reports the results of these tests.

3. Close the **Network** dialog box to return to the sign-in page.

To verify networking requirements for 1.0+ and 2.0+ clients

1. Open your WorkSpaces client. If this is the first time you have opened the client, you are prompted to enter the registration code that you received in the invitation email.

2. Choose **Network** in the lower-right corner of the client application. The client application tests the network connection, ports, and round-trip time, and reports the results of these tests.

3. Choose **Dismiss** to return to the sign-in page.

Save your credentials

You can choose whether to save your sign-in credentials securely so that you can reconnect to your WorkSpace without re-entering your credentials while the client application remains running. Your credentials are securely cached in RAM only. You can disable this feature and enable it again at any time.

To save your credentials for 3.0+ clients

1. Open your WorkSpaces client.

2. On the client login screen, select or clear the **Keep me logged in** check box to enable or disable this option as required.

To save your credentials for 1.0+ and 2.0+ clients

1. Open your WorkSpaces client.

2. On the client login screen, choose the gear icon (Windows) or the **Option** menu (macOS), and choose **Advanced Settings**.

3. Select or clear the **Remember Me** check box to enable or disable this option as required.

(Optional) Change your password

You can change your WorkSpaces login password at any time.

To change your password

1. Open your WorkSpaces client.

2. On the client login screen, choose **Forgot Password?** under the **Sign In** button.

> **ⓘ Note**
>
> If **Forgot password?** isn't available on your login screen, contact your WorkSpaces administrator for assistance with resetting your password.
>
> **Forgot Password?** is not available in the AWS GovCloud (US-West) Region.

3. Enter your user name, and then enter the characters you see in the image.

4. Choose **Recover Password**.

5. You will receive an email with a password-reset link. Follow the instructions in the email to change your password. Passwords are case-sensitive and must be between 8 and 64 characters in length, inclusive. Passwords must contain at least one character from each of the following categories:

   - Lowercase characters (a-z)

   - Uppercase characters (A-Z)

   - Numbers (0-9)

   - Non-alphanumeric characters (~!@#$%^&*_-+=`|\(){}[]:;"'<>,.?/)

   Ensure you don't include non-printable unicode characters, such as white spaces, carriage reture tabs, line breaks, and null characters.

> **ⓘ Note**
>
> If you receive an error, contact your AWS Managed Microsoft AD administrator.

Supported features by protocol type for WorkSpaces

WorkSpaces is supported by the DCV and PCoIP protocols. Each protocol supports different WorkSpaces features and clients. Android and iPad clients aren't supported by DCV WorkSpaces.

Contents

- [Supported DCV features for WorkSpaces](#)
- [Supported PCoIP features for WorkSpaces](#)

Supported DCV features for WorkSpaces

The following table compares the features that are supported by the DCV WorkSpaces clients.

> **(i) Note**
>
> Android and iPad clients aren't currently supported by DCV WorkSpaces.

Feature	Windows client	MacOS client	Linux client	Web access	Notes
WorkSpaces Pool support	✓	✓	✗	✓	On client version 5.20.0 or greater.
Client access restriction	✓	✓	✓	✓	[Control device access](#)
USB redirection	✗	✗	✗	✗	
Audio input	✓	✓	✓	✓	Not supported on Amazon Linux DCV WorkSpaces but supported on Ubuntu

Feature	Windows client	MacOS client	Linux client	Web access	Notes
					WorkSpaces. See [Manage your Ubuntu WorkSpaces](), [Manage your Rocky Linux WorkSpaces](), and [Manage your Red Hat Enterprise Linux WorkSpaces]() for more information.
Video input	✓	✓	✓	✓	Not supported on Amazon Linux 2 DCV WorkSpaces and Red Hat Enterpris e Linux WorkSpace s but supported on Ubuntu and Rocky Linux WorkSpaces. See [Manage your Ubuntu WorkSpaces]() and [Manage your Rocky Linux WorkSpaces]() for more information.
Storage redirection	✗	✗	✗	✗	
Local printer redirection	✓	✓	✓	✗	[Print from a WorkSpaces]()
Clipboard redirection	✓	✓	✓	✓	Copy and paste on iPad and Android supports text and HTML content only.

Feature	Windows client	MacOS client	Linux client	Web access	Notes
HIPAA/PCI compliance	✓	✓	✓	✓	Compliance and Security FAQ
Active directory authentication	✓	✓	✓	✓	Manage directories for WorkSpaces
SAML 2.0	✓	✓	✓	✓	
Certificate-based Authentication	✓	✓	✓	✓	
Multi-factor authentication (MFA)	✓	✓	✓	✓	Compliance and Security FAQ
Smart card (CAC and PIV readers)	✓	✓	✗	✗	WorkSpaces client smart card support
Certificate for access control	✓	✓	✓	✗	Configure the restriction
Encryption at rest	✓	✓	✓	✓	Encryption FAQ

Feature	Windows client	MacOS client	Linux client	Web access	Notes
Client customization available	✓	✓	✓	✓	Customize WorkSpaces branding
WebAuthn support	✓	✓	✓	✗	WebAuthn authentication for WorkSpaces client
Monitor support	Windows display support	macOS display support	Linux display support	Web access client views	
File transfer support	✓	✗	✓	✓	File transfer support in the WorkSpaces client applications Only available for personal and Windows WorkSpaces. Unavailable for pooled and Linux WorkSpaces.
Idle disconnect timeout	✓	✓	✓	✓	Configure idle disconnect timeout for DCV Not supported on Linux WorkSpaces.
AWS Global Accelerator (AGA) support	✓	✓	✓	✓	On Windows and Mac client version 5.23.0 or greater. On Linux client version 2024.7 or greater.

Supported PCoIP features for WorkSpaces

> **ⓘ Note**
>
> Starting November 7, 2025, Amazon WorkSpaces PCoIP Web Access will no longer be open to new customers. After this date, the feature will only receive critical functional and security updates. For more information, see [WorkSpaces Web Access](#).

The following table compares the features that are supported by the PCoIP WorkSpaces clients.

Feature	Windows client	MacOS client	Linux client	iPad client	Web access	Android	Notes
Client access restriction	✓	✓	✓	✓	✓	✓	[Control device access](#)
USB redirection	Available with exceptions	✗	✗	N/A	✗	N/A	WorkSpaces only supports YubiKey redirection for Windows clients. For a list of supported devices, see [WorkSpaces client peripheral device support](#). For more information on YubiKey redirection, see [Hardware security keys](#).
Audio input	✓	✓	✓	✓	✗	✓	

Feature	Windows client	MacOS client	Linux client	iPad client	Web access	Android	Notes
Video input	✗	✗	✗	✗	✗	✗	WorkSpaces supports video input on DCV only.
Storage redirection	✗	✗	✗	✗	✗	✗	
Local printer redirection	✓	✓	✗	✗	✗	✗	Print from a WorkSpaces
Clipboard redirection	✓	✓	✗	Available with exceptions	✓	Available with exceptions	Copy and paste on iPad and Android supports text and HTML content only.
HIPAA/ PCI compliance	✓	✓	✓	✓	✓	✓	Compliance and Security FAQ
Active directory authentication	✓	✓	✓	✓	✓	✓	Manage directories for WorkSpaces
SAML 2.0	✓	✓	✓	✗	✗	✗	

Feature	Windows client	MacOS client	Linux client	iPad client	Web access	Android	Notes
Certifica te- based Authentic ation	✗	✗	✗	✗	✗	✗	
Multi- factor authentic ation (MFA)	✓	✓	✓	✓	✓	✓	Compliance and Security FAQ
Smart card (CAC and PIV readers)	✗	✗	✗	✗	✗	✗	WorkSpaces client smart card support
Certifica te for access control	✓	✓	✗	✗	✗	✓	Configure the restriction
Encryptio n at rest	✓	✓	✓	✓	✓	✓	Encryption FAQ
Client customiza tion available	✓	✓	✓	✓	✓	✓	Customize WorkSpaces branding
YubiKey support	✓	✗	✗	✗	✗	✗	Enable USB redirection for YubiKey U2F

Feature	Windows client	MacOS client	Linux client	iPad client	Web access	Android	Notes
Monitor support	Windows display support	macOS display support	Linux display support	N/A	Web access client views	Android client views	

WorkSpaces clients

You can connect to your WorkSpace using the client application for a supported device or a web browser. To start using your WorkSpace, see Getting started with your WorkSpace.

> ⚠️ **Important**
>
> WorkSpaces Pool is supported only on the macOS, Web Access, and Windows client Application version 5.20.0 or greater.

Clients

- WorkSpaces Android client application
- WorkSpaces iPad client application
- WorkSpaces Linux client application
- WorkSpaces macOS client application
- WorkSpaces PCoIP zero client
- WorkSpaces Web Access
- WorkSpaces Windows client application

WorkSpaces Android client application

The following information will help you get started with the WorkSpaces Android client application.

Contents

- Requirements
- Setup and installation
- Connect to your WorkSpace
- Gestures
- Sidebar menu
- Keyboard
- Trackpad mode

- [Display support](#)

- [Disconnect](#)

- [Clipboard support](#)

- [Release notes](#)

Requirements

The Amazon WorkSpaces Android client application requires the following:

- Amazon Kindle Fire tablets released after 2012 with Fire OS 4.0 and later.

- Android tablets and phones with Android OS 4.4 and later. The client application works on most devices with Android version 4.4 or later, but some devices might not be compatible.

> **ⓘ Note**
>
> Versions of the Android client application after 2.4.15 require devices with Android OS 9 and later.
> Versions of the Android client application after 5.0.0 require devices with Android OS 13 and later.

- Chromebooks that support installing Android applications. Chromebooks launched in 2019 or later support installing Android applications. However, some Chromebooks launched before 2019 might not support installing Android applications.

  We recommend using the Android client application if your Chromebook supports it. To determine whether your Chromebook is compatible with the Amazon WorkSpaces Android client application or whether it requires the Amazon WorkSpaces Chromebook client application, see the [installation steps for Chromebooks launched before 2019](#).

- Devices that support running 64-bit applications.

> **ⓘ Note**
>
> - The WorkSpaces Android client application is not available for the DCV.
>
> - If your WorkSpace is located in the Asia Pacific (Mumbai) Region, you must use version 2.4.19 or later of the Amazon WorkSpaces Android client application.

Setup and installation

To download and install the client application, complete the following procedure.

(For devices other than Chromebooks launched before 2019) To download and install the client application

1. On your device, open https://clients.amazonworkspaces.com/ and choose the link for your device (either **Android/Chromebook** or **Fire Tablet**).

2. Download and install the application.

3. Verify that the Amazon WorkSpaces client application icon appears on one of the device desktops.

(For Chromebooks launched before 2019) To download and install the client application

1. Determine whether your Chromebook supports Android applications by checking its status on the list of [Chrome OS Systems Supporting Android Apps](#).

2. Depending on your Chromebook's status, do one of the following:

   - If your Chromebook's status is marked as **Stable Channel**, do the following:

     1. Follow the instructions in [Install Android apps on your Chromebook](#) to enable your Chromebook to install Android applications.

        > **ⓘ Note**
        >
        > In some cases, your WorkSpaces administrator might need to enable your Chromebook to install Android applications. If you are unable to install the Android client application on your Chromebook, contact your WorkSpaces administrator for assistance.

     2. On your Chromebook, open https://clients.amazonworkspaces.com/ and choose **Android/Chromebook**.

     3. Download and install the application.

     4. Verify that the Amazon WorkSpaces client application icon appears on one of the device desktops.

   - If your Chromebook's status is marked as **Planned** or if your Chromebook does not appear on the list, do the following:

1. Determine whether your Chromebook meets the requirements of the Amazon WorkSpaces Chromebook client application:

   - The WorkSpaces Chromebook client application requires a Chromebook with Chrome OS version 45 or later. The client application works on most Chromebooks with version 45 or later, but some devices might not be compatible. If you have problems with a device, you can report the problem on the WorkSpaces forum.

   - To check the version of Chrome OS on your Chromebook, go to the status area, where your account picture appears. Choose **Settings**, **About Chrome OS**.

2. If your Chromebook is running Chrome OS version 45 or later, open the link to the Amazon WorkSpaces Chromebook client application on the Chrome Web Store.

3. Download and install the application.

4. Verify that the Amazon WorkSpaces client application icon appears in your Chromebook search.

Connect to your WorkSpace

To connect to your WorkSpace, complete the following procedure.

To connect to your WorkSpace

1. On your device, open the Amazon WorkSpaces client application.

2. The first time that you run the client application, you are prompted for your registration code, which is contained in your welcome email. The WorkSpaces client application uses the registration code and user name to identify which WorkSpace to connect to. When you launch the client application later, the same registration code is used. You can enter a different registration code by launching the client application and tapping **Enter new registration code** on the login screen.

3. Enter your sign-in credentials and tap **Sign In**. If your WorkSpaces administrator has enabled multi-factor authentication for your organization's WorkSpaces, you are prompted for a passcode to complete your login. Your WorkSpaces administrator will provide more information about how to obtain your passcode.

4. If your WorkSpaces administrator has not disabled the "Remember Me" feature, you are prompted to save your credentials securely so that you can connect to your WorkSpace easily in the future. Your credentials will be securely cached up to the maximum lifetime of your Kerberos ticket.

After the client application connects to your WorkSpace, your WorkSpace desktop is displayed.

Gestures

The following gestures are supported for the WorkSpaces Android client application.

Single tap

Equivalent to a single click in Windows.

Double tap

Equivalent to a double-click in Windows.

Two finger single tap

Equivalent to a right-click in Windows.

Two finger double tap

Toggles the on-screen keyboard display. If a keyboard is attached to the device, a set of keyboard shortcuts is shown instead.

Swipe from left

Displays the sidebar menu. For more information, see Sidebar menu.

Two finger scroll

Scrolls vertically.

Two finger pinch

Zooms display in or out.

Two finger pan

Pans the desktop when zoomed in.

Sidebar menu

The sidebar menu is displayed by swiping from the left side of the screen.
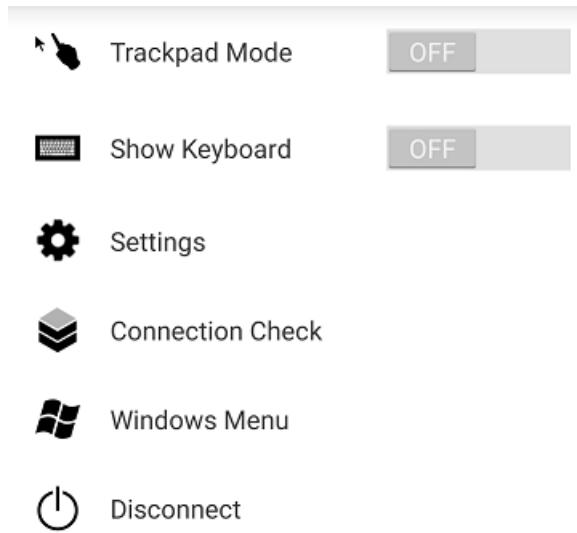
The sidebar menu provides quick access to the following features:

Trackpad Mode – Turns the trackpad on or off. For more information, see [Trackpad mode](#).

Show Keyboard – Toggles the display of the on-screen keyboard. If a keyboard is already attached, only a row of keyboard shortcuts is displayed.

Settings – Displays controls to change the screen resolution or the scroll direction.

Connection Check – Displays the connection status.

Windows Menu – Displays the Windows Start Menu.

Disconnect – Disconnects the client application without logging off.

Keyboard

To toggle the display of the on-screen keyboard, double-tap with two fingers anywhere on the screen. Special key combinations are displayed in the top row of the keyboard.

Trackpad mode

The trackpad mode is set using the [sidebar menu](#).

Trackpad mode off

When trackpad mode is off, the mouse cursor is placed wherever you tap your finger. In this mode, a single tap is equivalent to a left mouse button click and a two finger single tap is equivalent to a right mouse button click.

Trackpad mode on

When trackpad mode is on, the mouse cursor tracks the movement of your finger on the screen. In this mode, simulate a left mouse button click by tapping the left mouse button icon.

Simulate a right mouse button click by tapping the right mouse button icon.

Display support

The Amazon WorkSpaces Android client application supports a single monitor. Multiple monitors are not supported.

The maximum supported screen resolution depends on your device's display. Although specific screen resolution settings are offered in the **Settings** menu, if you choose **Default**, WorkSpaces matches the resolution that you've set on your device. If your device supports a resolution higher than 2800x1752, choose **Default** if you want WorkSpaces to use a higher resolution.

Resolution setting	When to use
2800x1752, 2560x1440, 1920x1080, 1600x900, 1280x720, 960x540	Choose one of these settings if you want your display to use this exact resolution.
Default	Choose this setting to match the resolution that you've set on your device, up to the maximum resolution that your device supports. If you choose **Default** and you're using a high DPI display, the screen resolution is adjusted to a lower one so that text and icons are easier to read.
High DPI Mode	Choose this setting for better maximum resolution of your WorkSpace on high DPI displays. If you choose **High DPI Mode** and the text and icons on your WorkSpace are smaller than you'd prefer, either choose **Default** instead, or adjust the scaling settings on your WorkSpace. For more information about high DPI mode and how to adjust the scaling settings on your WorkSpace, see Enabling high DPI display for WorkSpaces.

Disconnect

To disconnect the Android client, display the sidebar menu, tap the disconnect icon, and tap **Disconnect**. You can also log off of the WorkSpace, which disconnects the client.

Clipboard support

The clipboard supports copy and paste of text and HTML content only. The maximum uncompressed object size is 20 MB. For more information, see the section called "I'm having trouble copying and pasting".

> ⓘ **Note**
>
> When copying from a Microsoft Office app, the clipboard only contains the last copied item, and the item is converted into standard format. If you copy content larger than 890 KB from a Microsoft Office app, the app might become slow or unresponsive for up to 5 seconds.

Release notes

Android client application release notes

The following table describes the changes to each release of the Android client application.

Release	Date	Changes
5.1.1	April 2, 2025	- Updated PCoIP SDK for Android. - Updated the .NET SDK for Android. - Bug fixes and enhancements.
5.0.1	November 6, 2024	Bug fixes and enhancements.
5.0.0	February 26, 2024	- Added support for the Israel (Tel Aviv) Region. - Updated PCoIP SDK for Android.

Release	Date	Changes
		• Added accessibility improvements, including screen reader support and keyboard-only navigation enhancement.
4.0.6	August 18, 2023	• Improved client custom branding by storing assets in the same AWS Regions as provisioned WorkSpaces. • Resolved the Spanish keyboard mapping issues.
4.0.5	May 5, 2023	• Added connection support to WorkSpaces provisioned in the AWS GovCloud (US-East) Region • Added accessibility enhancements
4.0.4	December 15, 2022	Updated the .NET framework for the WorkSpaces Android client
4.0.3	October 20, 2022	Upgraded target Android API level to continue supporting 64-bit Android 12 and later versions
4.0.2	August 3, 2022	Resolved an issue that the touchpad scrolling was too sensitive within WorkSpaces on Chromebooks
4.0.1	May 12, 2022	• Updated PCoIP SDK for the WorkSpaces Android client • Updated WSP SDK for the WorkSpaces Android client
3.0.4	October 14, 2021	• Resolves crashing issues related to invalid cursor data • Bug fixes
3.0.2	July 13, 2021	Minor enhancements and fixes

Release	Date	Changes
3.0.1	June 30, 2021	• Adds support for self-service WorkSpace management capabilities. • Adds support for certificate-based trusted devices.
2.4.21	May 20, 2021	• Adds 2800x1752 and High DPI Mode in resolution options • Addresses a crash scenario related to cursor rendering • Minor enhancements and fixes ⓘ **Note** Because the 32-bit PCoIP SDK for Android has reached the end of support, Version 2.4.21 is the final release of Amazon WorkSpaces Android client, which supports both 32-bit and 64-bit for Android 9 and above. Next release onwards, Amazon WorkSpaces Android client will only support 64-bit.
2.4.20	March 25, 2021	• Addresses a crash issue at login • Minor enhancements and fixes
2.4.19	February 22, 2021	Enhanced support for resolution 2560x1440

Release	Date	Changes
2.4.18	October 19, 2020	• Adds support for certain Chromebook models that were previously not supported • Fixes multiple key-mapping issues pertaining to English, French, and Japanese keyboard layouts • Adds support for faster reconnection to WorkSpaces on Chromebook devices when resuming from sleep mode
2.4.17	February 24, 2020	Minor enhancements and fixes
2.4.16	January 30, 2020	Added support for versions above 64-bit Android 9
2.4.15	June 24, 2019	• Adds support for mouse cursor contextual shape changes • This is the last version that supports versions below Android 8
2.4.14		• Adds support for the Right alt key mapping with Japanese keyboard layouts • Resolves an occasional issue with blue overlay
2.4.13		Minor fixes
2.4.12		• Resolves an issue that makes the login page bounce on a few devices • Minor fixes
2.4.11		• Resolves an issue with content being selected with two-finger scrolling • Minor fixes

Release	Date	Changes
2.4.10		Improves support for Japanese keyboard layouts
2.4.9		Adds support for Samsung Galaxy Note 9
2.4.7		• Improves clipboard redirection • Improves DeX startup
2.4.6		Adds support for uniform resource identifiers (URIs), which enable login orchestration
2.4.5		• Adds support for time zone redirection for more Regions: America/Indianapol is America/Indiana/Marengo America/Indiana/Vevay America/Indiana/Indianapolis • Includes text changes to the Login page user interface
2.4.4		Minor improvements to session provision handling
2.4.2		• Minor fixes • Improves copy and paste
2.4.0		• New logo • Improves the user interface and stability
2.3.4		• Addresses a display overlay issue on Android Oreo when a mouse is connected to the device • Adds support for Samsung S8/S8+ screen configurations • Resolves minor issues
2.3.3		Localization enhancements

Release	Date	Changes
2.2.0		• Adds support for the German language • Improves the Japanese user interface • Improves stability
2.1.0		• Adds support for the following new WorkSpace states: STOPPING and STOPPED • Adds support for audio in, enabling you to make calls or attend web conferences • Resolves minor issues and improves stability
2.0.0		• Adds support for saving registration codes, enabling you to switch WorkSpaces without re-entering the registration codes • Improves usability and stability
1.0.15		• Adds advanced connection health checks, enabling you to troubleshoot connection issues • Improves stability
1.0.11		• Improves the user interface and login experience • Adds support for choosing the screen resolution • Adds support for choosing the scrolling direction
1.0.10		• Improves the login experience • Adds time zone synchronization between the local device and the WorkSpace
1.0.9		Improves the login experience
1.0		Initial release

Chromebook client application release notes

The following table describes the changes to each release of the Chromebook client application.

> **ⓘ Note**
>
> Version 2.4.13 is the final release of the Amazon WorkSpaces Chromebook client application. Because Google is phasing out support for Chrome Apps, there will be no further updates to the WorkSpaces Chromebook client application, and its use is unsupported.

Release	Date	Changes
2.4.13	April 24, 2019	Fixed an issue that causes the app not to restore to full-screen mode after a screen unlock
2.4.12		Minor bug fixes
2.4.11		Minor bug fixes
2.4.10		Improves support for Japanese keyboard layouts
2.4.8		Improves support for UK keyboards
2.4.7		• Improves clipboard redirection • Adds support for tap-to-click for trackpads • Improves device resolution
2.4.6		• Resolves an issue that causes screens to freeze • Resolves trackpad issues
2.4.5		• Adds support for time zone redirection for more Regions: America/Indianapol is America/Indiana/Marengo America/I ndiana/Vevay America/Indiana/Indianapolis

Release	Date	Changes
		• Includes text changes to the Login page user interface
2.4.4		Minor improvements to session provision handling
2.4.2		Resolves a bug with Caps Lock
2.4.0		• New logo • Improves the user interface and stability
2.2.7		Resolves minor issues
2.2.4		Localization enhancements
2.2.1		• Adds support for the German language • Improves the Japanese user interface • Improves stability
2.1.3		• Adds support for the following new WorkSpace states: STOPPING and STOPPED • Adds support for audio in, enabling you to make calls or attend web conferences • Resolves minor bugs and improves stability
2.0.0		• Adds support for saving registration codes, enabling you to switch WorkSpaces without re-entering the registration codes • Improves usability and stability
1.0		Initial release

WorkSpaces iPad client application

The following information will help you get started with the WorkSpaces iPad client application.

Contents

Requirements

The WorkSpaces iPad client application requires the following:

- iPad 2 or later with iOS 8.0 to 17.0

- iPad Retina with iOS 8.0 to 17.0

- iPad Mini with iOS 8.0 to 17.0

- iPad Pro with iOS 9.0 to 17.0

> ⓘ **Note**
>
> - The Amazon WorkSpaces iPad client application is not available for the DCV.
>
> - If your WorkSpace is located in the Asia Pacific (Mumbai) Region, you must use version 2.4.17 or later of the Amazon WorkSpaces iPad client application.
>
> - If your iPad is using iPadOS 14.5 to 17.0, we recommend using version 2.4.18 or later of the Amazon WorkSpaces iPad client application.

Setup and installation

To download and install the client application, complete the following procedure.

To download and install the client application

1. On your iPad, open Amazon WorkSpaces Client Downloads and choose the **iPad** link.

2. Download and install the application.

3. Verify that the Amazon WorkSpaces client application icon appears on one of the iPad desktops.

Connect to your WorkSpace

To connect to your WorkSpace, complete the following procedure.

To connect to your WorkSpace

1. On your iPad, open the Amazon WorkSpaces client application.

2. The first time that you run the client application, you are prompted for your registration code, which is contained in your welcome email. The WorkSpaces client application uses the registration code and user name to identify which WorkSpace to connect to. When you launch the client application later, the same registration code is used. You can enter a different registration code by launching the client application and choosing **Enter new registration code** on the login screen.

3. Enter your sign-in credentials and choose **Sign In**. If your WorkSpaces administrator has enabled multi-factor authentication for your organization's WorkSpaces, you are prompted for a passcode to complete your login. Your WorkSpaces administrator will provide more information about how to obtain your passcode.

4. If your WorkSpaces administrator has not disabled the "Remember Me" feature, you are prompted to save your credentials securely so that you can connect to your WorkSpace easily in the future. Your credentials will be securely cached up to the maximum lifetime of your Kerberos ticket.

   After the client application connects to your WorkSpace, your WorkSpace desktop is displayed.

Gestures

The following gestures are supported for the WorkSpaces iPad client application.

Single tap

> Equivalent to a single click in Windows.

Double tap

> Equivalent to a double click in Windows.

Two finger single tap

> Equivalent to a right-click in Windows.

Two finger double tap

> Toggles the on-screen keyboard display.

Swipe from left

> Displays the radial menu. For more information, see Radial menu.

Two finger scroll

> Scrolls vertically.

Two finger pinch

> Zooms display in or out.

Two finger pan

> Pans the desktop when zoomed in.

Radial menu

The radial menu is displayed by swiping from the left side of the screen.

The radial menu provides quick access to the following features:
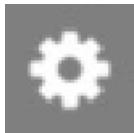
Settings – Displays controls to change the screen resolution, change the scroll direction, or connect or disconnect the Swiftpoint GT, ProPoint, or PadPoint mouse.

Connection Status – Displays the connection status of the WorkSpace.

Disconnect – Disconnects the client application without logging off.

Direct Mouse Mode – Sets the input to direct mouse mode. For more information, see Mouse modes.

Help – Displays the command and gesture tutorial.

Keyboard – Toggles the display of the on-screen keyboard.

Windows Start Menu – Displays the Windows Start Menu.
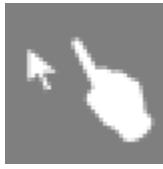
Offset Mouse Mode – Sets the input to offset mouse mode. For more information, see Mouse modes.

Keyboard and command shortcuts

To toggle the display of the on-screen keyboard, double-tap with two fingers anywhere on the screen. Special key combinations (command shortcuts) that are frequently used in Windows, such as Ctrl+Alt+Del, Alt+Tab, Ctrl+A, Ctrl+C, Ctrl+V, Ctrl+X, and so on, are displayed in the top row of the on-screen keyboard.

If you have a full-size physical keyboard attached to your iPad, you can use Control+Option+Delete ⌦
to send Ctrl+Alt+Del to your Windows WorkSpace. (Be sure to use the forward Delete key, not the backspace Delete key.)

Mouse modes

The mouse mode is set using the radial menu.

Direct mode

In direct mouse mode, the mouse cursor is placed wherever you tap your finger. In this mode, a single tap is equivalent to a left mouse button click and a two finger single tap is equivalent to a right mouse button click.

Offset mode

In offset mouse mode, the mouse cursor tracks the movement of your finger on the screen. In this mode, simulate a left mouse button click by tapping the left mouse button icon.

Simulate a right mouse button click by tapping the right mouse button icon.

Swiftpoint GT, ProPoint, or PadPoint mouse

You can use the Swiftpoint GT, ProPoint, or PadPoint mouse on an iPad to interact with your WorkSpace. To do so, before you launch the Amazon WorkSpaces iPad client application, enable Bluetooth on your iPad and pair the Swiftpoint mouse with your iPad (the Swiftpoint mouse should pair automatically). To connect the Swiftpoint mouse and your iPad client, display the radial menu, and tap **Settings**. For **SwiftPoint GT Mouse**, choose **Connect**.

> ⓘ **Note**
>
> Although the Swiftpoint GT mouse is no longer available, you can use the Swiftpoint ProPoint and PadPoint mice with the Amazon WorkSpaces iPad client application instead. The Swiftpoint TRACPOINT, PenPoint, and GoPoint mice aren't supported for use with the WorkSpaces iPad client. For more information, see Swiftpoint GT Mouse.

iPads with iPadOS 13.4 or later also support Bluetooth mice. For more information, see Use a Bluetooth mouse or trackpad with your iPad in the Apple Support documentation.

Disconnect

To disconnect the iPad client application, display the radial menu, tap the disconnect icon, and tap **Disconnect**. You can also log off of the WorkSpace, which disconnects the client.

To quit the WorkSpaces iPad client application

1. Open the App Switcher by doing one of the following:

   - Swipe up from the bottom edge and pause in the center of the screen.

   - Double-click the **Home** button (on an iPad with a **Home** button).

2. Swipe up on the WorkSpaces iPad client application to close it.

Clipboard support

The clipboard supports copy and paste of text and HTML content only. The maximum uncompressed object size is 20 MB. For more information, see the section called "I'm having trouble copying and pasting".

> ⓘ **Note**
>
> When copying from a Microsoft Office app, the clipboard only contains the last copied item, and the item is converted into standard format. If you copy content larger than 890 KB from a Microsoft Office app, the app might become slow or unresponsive for up to 5 seconds.

Release notes

The following table describes the changes to each release of the iPad client application.

Release	Date	Changes
2.4.28	August 7, 2025	- Fixed an issue that caused audio to stop when minimizing the app. - Fixed an issue that prevented the copy/paste functionality from working properly.

Release	Date	Changes
		• Updated the PCoIP SDK. • Other bug fixes and enhancements.
2.4.27	February 12, 2025	Bug fixes and enhancements.
2.4.26	November 13, 2024	Bug fixes and enhancements.
2.4.25	October 7, 2023	Improved client custom branding by storing assets in the same AWS Regions as provisioned WorkSpaces.
2.4.24	May 9, 2023	• Added connection support to WorkSpaces provisioned in the AWS GovCloud (US-East) Region. • Added accessibility enhancements.
2.4.21	August 3, 2022	• Added support for a new Region. • Minor bug fixes and enhancements.
2.4.20	April 30, 2022	Fixed screen refresh issue that occurred when changing display resolution during active sessions.
2.4.19	Oct 20, 2021	Resolves the issue of users not being able to close the on-screen keyboard in iPadOS 15.
2.4.18	May 9, 2021	Addresses the crash on startup issue on iPadOS 14.5
2.4.17	February 18, 2021	Improved Japanese keyboard support
2.4.16	September 27, 2020	Minor bug fixes and enhancements

Release	Date	Changes
2.4.15	June 28, 2020	• Adds native mouse and trackpad support on iPadOS 13.4+ • Fixes instances of keyboard shortcuts not working from external keyboards on iPadOS 13.4+ • Includes improved error messaging and mouse pointer related UI enhancements • Minor bug fixes
2.4.14	April 17, 2020	• Running the client application on a jailbroke n device is no longer supported • Minor bug fixes
2.4.13	February 28, 2020	Minor bug fixes
2.4.11	October 28, 2019	• Resolves an issue that can periodically result in repeated key presses with WorkSpaces running Amazon Linux 2 • Resolves an issue with reconnecting to WorkSpaces • Minor bug fixes
2.4.9		Minor bug fixes
2.4.7		Closing the WorkSpaces client app now expires the reconnect token. You can only reconnect to your WorkSpace when the client app is running.
2.4.6		Minor fixes to the on-screen keyboard
2.4.5		Adds support for uniform resource identifiers (URIs), which enable login orchestration

Release	Date	Changes
2.4.4		• Adds support for time zone redirection for more Regions: America/Indianapolis America/Indiana/Marengo America/Indiana/Vevay America/Indiana/Indianapolis • Includes text changes to the Login page user interface
2.4.3		• Adds support for the Swiftpoint GT mouse scroll wheel • Minor improvements to session provision handling
2.4.2		• Minor fixes • Improves copy and paste • Adds initial support for the Swiftpoint GT mouse (the scroll wheel is not supported)
2.4.0		• New logo • Improves the user interface and stability
2.2.4		Localization enhancements
2.2.3		• Enables ATS to support HTTPS TLS 1.2 • Adds a microphone privacy statement • Improves the default resolution for iPad Pro models • Improves localization in multiple languages • Resolves a black screen issue on 9.7-inch iPad Pro models • Resolves the app icon zooming issue on iOS 10 • Resolves an audio echo issue • Security fixes and various improvements

Release	Date	Changes
2.2.0		• Adds support for audio session management, enabling you to play music in the background while using WorkSpaces • Adds support for the German language • Adds support for local IPv6 networking
2.1.0		• Adds support for the following new WorkSpace states: STOPPING and STOPPED • Resolves minor bugs and improves stability
2.0.0		• Adds support for saving registration codes, enabling you to switch WorkSpaces without re-entering the registration codes • Resolves an issue with arrow key support on Bluetooth keyboards • Resolves an issue with Bluetooth keyboards inadvertently activating the on-screen shortcut bar • Improves usability and stability
1.1		• Adds advanced connection health checks, enabling you to troubleshoot connection issues • Improves stability
1.0.11		Improves stability on iOS 8
1.0.10		Improves stability

Release	Date	Changes
1.0.9		• Improves the user interface and login experience • Adds support for choosing the screen resolution • Adds support for choosing the scrolling direction
1.0.8		• Improves error messages • Improves the Bluetooth keyboard experience • Improves the scrolling experience
1.0.7		Improves the login experience
1.0.6		Improves the login experience
1.0.5		• Improves the login experience • Improves network connectivity
1.0.4		Improves the login experience
1.0.3		Improves the login experience
1.0.2		• Adds connection health checks • Resolves specific issues with the iPad Air and iPad mini
1.01		Improves radial functionality
1.0		Initial release

WorkSpaces Linux client application

The following information will help you get started with the WorkSpaces Linux client application.

Contents

- [Requirements](#)

- [Setup and installation](#)

- [Connecting to your WorkSpace](#)

- [Manage your login information](#)

- [Client views](#)

- [Client language](#)

- [Display support](#)

- [Proxy servers](#)

- [Command shortcuts](#)

- [Clipboard redirection](#)

- [Disconnect](#)

- [Release notes](#)

Requirements

For the WorkSpaces Linux client version 2023.x to be able to access the WorkSpaces service, you must add the WorkSpaces Web Access domain (https://webclient.amazonworkspaces.com/) to the allowlist on the network from which the client is trying to access the service.

> **ⓘ Note**
>
> - By default, Linux client access is disabled. To use this client with your WorkSpace, your Amazon WorkSpaces administrator must enable Linux client access for your WorkSpaces directory. For more information, see [Control Device Access](#) in the *Amazon WorkSpaces Administration Guide*.
>
> - If your WorkSpace is located in the Asia Pacific (Mumbai) Region, you must use version 3.1.3 or later of the Amazon WorkSpaces Linux client application.
>
> - The WorkSpaces Linux client version 2023.0.4395 for Ubuntu 22.04 is only available for the DCV.

Setup and installation

Download and install the WorkSpaces Linux client application from [Amazon WorkSpaces Client Downloads](#). Detailed installation instructions are included on the Linux client page on the Client Downloads site.

2023.x clients

To launch the Linux client from the command line, use:

```
workspacesclient
```

> **ⓘ Note**
>
> When running a new client application, you will be prompted for your registration code, which is can be found in your welcome email. For existing customers, you can find the registration code under /home/UserName/.local/share/Amazon Web Services/ Amazon WorkSpaces/RegisterationList.json.

3.x and 4.x clients

To launch the Linux client from the command line, use:

```
/opt/workspacesclient/workspacesclient
```

Connecting to your WorkSpace

To connect to your WorkSpace, complete the following procedure.

To connect to your WorkSpace

1. The first time that you run the client application, you are prompted for your registration code, which is contained in your welcome email. The WorkSpaces client application uses the registration code and user name to identify which WorkSpace to connect to. When you launch the client application later, the same registration code is used. To enter a different registration code, launch the client application, and then choose **Change Registration Code** at the bottom of the login page.

2. Enter your sign-in credentials in the login screen and choose **Sign In**. If your WorkSpaces administrator has enabled multi-factor authentication for your organization's WorkSpaces,

you are prompted for a passcode to complete your login. Your WorkSpaces administrator will provide more information about how to obtain your passcode.

3. If your WorkSpaces administrator has not disabled the **Keep me logged in** feature, you can select the **Keep me logged in** check box at the bottom of the login screen to save your credentials securely so that you can connect to your WorkSpace easily while the client application remains running. Your credentials are securely cached up to the maximum lifetime of your Kerberos ticket.

    After the client application connects to your WorkSpace, your WorkSpace desktop is displayed.

An interruption of network connectivity causes an active session to be disconnected. This can be caused by events such as closing the laptop lid, or the loss of your wireless network connection. The WorkSpaces client application for Linux attempts to reconnect the session automatically if network connectivity is regained within a certain amount of time. The default session resume timeout is 20 minutes, but this timeout can be modified by your network administrator.

Manage your login information

You can view your registration code and what Region your WorkSpace is in. You can specify whether you want the WorkSpaces client application to save your current registration code, and you can assign a name to your WorkSpace. You can also specify if you want Amazon WorkSpaces to keep you logged in to a WorkSpace until you quit or your login period expires.

2023.x clients

To manage your login information for a WorkSpace

1. In the WorkSpaces client application, go to **Settings**, **Manage Login Information**.

2. In the **Settings** dialog box, you can see the registration code and Region information for your WorkSpace.

3. (Optional) If you want the WorkSpaces client to remember your current registration code, enable **Save registration code**.

4. Under **Saved registration codes**, select the WorkSpace you want to name.

5. In the **WorkSpace name** box, enter a name for the WorkSpace.

6. (Optional) If you want WorkSpaces to keep you logged in until you quit or your login period expires, select the **Keep me logged in** check box.

7.   Choose **Save**.

3.x and 4.x clients

To manage your login information for a WorkSpace

1.   In the WorkSpaces client application, go to **Settings**, **Manage Login Information**.

2.   In the **Manage Login Information** dialog box, you can see the registration code and Region information for your WorkSpace.

3.   (Optional) If you want the WorkSpaces client to remember your current registration code, select the **Remember Registration Code** check box.

4.   Under **Saved registration codes**, select the WorkSpace you want to name.

5.   In the **WorkSpace name** box, enter a name for the WorkSpace.

6.   (Optional) If you want WorkSpaces to keep you logged in until you quit or your login period expires, select the **Keep me logged in** check box.

7.   Choose **Save**.

Client views

Full screen mode for 2023.x clients

You can switch to full screen mode by selecting the full screen icon in the client application menu. While in full screen mode, you can switch back to window mode by moving the pointer to the top of the screen. The client application menu is displayed, and you can choose **Leave Full Screen** in the client application menu.

Full screen mode for 3.x and 4.x clients

You can switch to full screen mode by choosing **View**, **Enter Full Screen** in the client application menu.

While in full screen mode, you can switch back to window mode by moving the pointer to the top of the screen. The client application menu is displayed, and you can choose **View**, **Leave Full Screen** in the client application menu.

You can also toggle full screen mode by pressing Ctrl+Alt+Enter.

Client language

2023.x clients

The WorkSpaces client automatically selects the default display language used by the operating system on your computer.

3.x and 4.x clients

You can select the language displayed by the client by performing the following steps.

> ⓘ **Note**
>
> In the client, Japanese is available in all Regions. However, Japanese is only available in Tokyo for individual WorkSpaces.

To select the client language

1. In the WorkSpaces client application, go to **Settings**, **Change Language**.

2. Enter your desired language in the **Select a language** list and choose **Save**.

3. Restart the client.

Display support

WorkSpaces WorkSpaces Value, Standard, Performance, Power, PowerPro, and GPU-enabled bundles support a maximum of four displays and a maximum resolution of 3840x2160 (ultra-high definition, or UHD). The maximum supported resolution depends on the number of displays, as shown in the following table.

Displays	Resolution
2	3840x2160
4	1920x1200

> ⓘ **Note**
>
> - You can only extend the display. You cannot duplicate the display. Duplicating the display will cause your session to be disconnected.

The WorkSpaces client application extracts the Extended Display Information Data (EDID) of all attached displays and determines the best compatibility match before starting the session. If you have a high pixel density (high DPI) display, the client application automatically scales the streaming window according to your local DPI settings. For better maximum resolution with high DPI displays, see Enabling high DPI display for WorkSpaces.

To use multiple monitors with WorkSpaces

1. Configure your local machine to use multiple monitors.

2. Start the WorkSpaces client application and log in to your WorkSpace.

3. Depending on which client you're using, do one of the following:

> ⓘ **Note**
>
> If you are using client version is 2023.x with DCV WorkSpaces, and if there are three or more monitors connected, your WorkSpace can also extend full-screen across a selection of those available monitors. Selected monitors must be set adjacent or sharing a side with each other, in your display setting. DCV multi-monitor support is built using DCV technology. For more information about requirements and troubleshooting, see Extending full-screen across selected monitors.

If you're using...	Do this
2023.x+ client	- Choose **Across a single monitor** to enter full screen mode on a single display (DCV only) - Choose **Across selective monitors** to enter full screen mode on selected displays (DCV only)

If you're using...	Do this
	• Choose **Across all monitors** to extend full screen mode on all display (for both PCoIP and DCV) • Toggle full screen mode by pressing Ctrl+Alt+Enter (PCoIP only)
3.0+ and 4.0+ client	Choose **View**, **Enter Full Screen On All Displays**. You can also toggle full screen mode by pressing Ctrl+Alt+Enter.
2.0+ client	Choose **View**, **Show Fullscreen**. You can also toggle full screen mode by pressing Ctrl+Alt+Enter.

Your WorkSpace should now be extended across your displays. Whichever display you have designated as your primary display is also the primary display in WorkSpaces when you enter full screen mode.

> **ⓘ Note**
>
> Using full screen mode on only some of the displays in a multiple monitor setup isn't possible. You can, however, press Alt+F10 or double-click the title bar to maximize the WorkSpaces client window on a display without extending the WorkSpace to the other displays.

Proxy servers

If your network requires you to use a proxy server to access the internet, you can enable your WorkSpaces client application to use a proxy for HTTPS (port 443) traffic. The WorkSpaces client applications use the HTTPS port for updates, registration, and authentication.

> **ⓘ Note**
>
> - The desktop streaming connections to the WorkSpace require ports 4172 and 4195 to be enabled, and do not go through the proxy server.
>
> - Proxy servers that require authentication with a sign-in credentials are not supported.

Using a proxy server

By default, the Linux client uses the proxy server that's specified in the device operating system settings. The first time the client is launched, the device operating system proxy server setting is used. If you select another option for the proxy server, that setting is used for subsequent launches of the client.

> **ⓘ Note**
>
> In versions 3.0.0 through 3.1.4, if you specify a custom proxy server, a "No network" error might appear when you attempt to log in to your WorkSpace. If you want to use a custom proxy server with the Linux client, we recommend upgrading to version 3.1.5. If you can't upgrade, you can work around the issue by using the default operating system proxy server instead of specifying a custom proxy server in the Linux client.

2023.x clients

To use a proxy server

1. In the WorkSpaces client application, from the login page, choose the three-line menu icon, **Connection Settings**.

2. In the **Connection Settings** dialog box, choose **Customize proxy server for WorkSpaces** , enter the proxy server URL or IP address, enter the port, and choose **Save**.

3.x and 4.x clients

To use a proxy server

1. In the WorkSpaces client application, go to **Settings**, **Manage Proxy Server**.

2. In the **Set Proxy** dialog box, select **Use proxy server**, enter the proxy server URL or IP address and the port, and choose **Save**.

Command shortcuts

The PCoIP WorkSpaces Linux client supports the following command shortcuts:

- Ctrl+Alt+Enter—Toggle full screen display (PCoIP only)

Clipboard redirection

Clipboard supports a maximum uncompressed object size of 20 MB. For more information, see I'm having trouble copying and pasting.

Disconnect

To disconnect the Linux client application, you have several options.

2023.x clients

- In theWorkSpaces streaming session, end the WorkSpace session by closing the window. In the dialog box, choose **Disconnect** to end your WorkSpace session. The client application will continue running if you want to login again.

- In the WorkSpaces streaming session, end your WorkSpace session by clicking on the three-line menu icon and choosing **Disconnect**. The client application will continue running, which allows you to login again.

3.x and 4.x clients

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Disconnect WorkSpace**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Quit Amazon WorkSpaces**. Your WorkSpace session ends, and the client application closes.

- In the Amazon WorkSpaces client application, close the WorkSpaces client window by clicking the close (X) button in the upper-right corner.

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Disconnect WorkSpace**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Quit Amazon WorkSpaces**. Your WorkSpace session ends, and the client application closes.

- In the Amazon WorkSpaces client application, close the WorkSpaces client window by clicking the close (X) button in the upper-right corner. In the prompt choose **End Session** , this disconnects you from the Amazon WorkSpaces and closes the client application.

Diagnostic log upload

To troubleshoot issues with the WorkSpaces client, ensure that diagnostic logging is enabled for your client. The log files that are sent to WorkSpaces include detailed information about your device and connection to the AWS network. You can enable diagnostic log uploads before or during WorkSpace streaming sessions so that these files are sent to WorkSpaces automatically.

> ℹ️ **Note**
>
> You can send log files before and during WorkSpaces streaming sessions. Log upload is supported only on Linux Ubuntu 20.04 and Ubuntu 22.04 clients.

To send log files

1. Open your Amazon WorkSpaces client.

2. In the top right of the WorkSpaces sign-in page after registration, choose **Settings** and then **Diagnostic logging**.

3. In the pop-up dialog box, set the toggle under **Diagnostic Logging** to your desired preference and choose **Save**.

4. You can choose the amount of data you want to provide in your session logs by selecting a radio button under **Log Level**. You can choose either **Standard logging (default)** or **Advance logging**.

> ⚠️ **Important**
>
> When you report an issue to Support, ensure you keep track of the device ID of the client that is experiencing the issue. The device ID can be found in the settings

diagnostics logging menu on the client login page after entering a registration code. This helps the support team identify logs associated with your specific device. Include the device ID in the tickets that you create regarding your specific issue.

Release notes

WorkSpaces client application for Ubuntu 24.04 release notes

The following table describes the changes to each release of the Ubuntu 24.04 client application.

Release	Date	Changes
2025.1	December 12, 2025	• Added support for installing the client on Ubuntu 24.04 devices.

WorkSpaces client application for Ubuntu 22.04 release notes

The following table describes the changes to each release of the Ubuntu 22.04 client application.

Release	Date	Changes
2025.1	December 12, 2025	• Added support for connecting to your WorkSpaces over IPv6 networks; manage your preferences from the Connection settings menu. • Fixed an issue with the Uniform Resource Identifier (URI) feature when special characters appear in the username. • Fixed an issue with the SAML 2.0 authentication flow for clients running in OEM thin clients.
2025.0	May 28, 2025	• Updated the DCV SDK. • Bug fixes and enhancements.

Release	Date	Changes
2024.8	December 11, 2024	• Added persistent webcam and microphone settings that are saved between DCV WorkSpaces sessions. • Bug fixes and enhancements.
2024.7	October 10, 2024	• Renamed WSP protocol to Amazon DCV protocol. • Added support for streaming over port 443 for TCP and UDP protocols on DCV WorkSpaces. • Added support for certificate-based authentication that enables a single sign-on login experience, with fewer user prompts. • Bug fixes and enhancements.
2024.5	August 26, 2024	Bug fixes and enhancements.
2024.4	August 15, 2024	Bug fixes and enhancements.
2024.3	August 8, 2024	• Updated DCV SDK. • Updated the PCoIP SDK. • Added support for streaming over TCP/UDP port 443.
2024.2	July 3, 2024	Bug fixes and enhancements.
2024.1	June 11, 2024	• Updated DCV SDK. • Added SAML 2.0 integration support. • Added pre-session smart cards authentication support.

Release	Date	Changes
2024.0	February 28, 2024	- Updated DCV SDK. - Fixed the keyboard capture issue - Added WebAuthn support for in-session authentication - Minor bug fixes and enhancements.
2023.2	December 19, 2023	- Added screen reader and keyboard navigation to improve accessibility. - Added support for AWS GovCloud (US-West) and AWS GovCloud (US-East).
2023.1	November 12, 2023	- Added Uniform Resource Identifier (URI) support. - Fixed Japanese keyboard mapping issue for tilde key. - Added diagnostic log upload support.

Release	Date	Changes
2023.0.4395	August 24, 2023	• Added DCV WorkSpaces connection support, including Windows, BYOL, and Ubuntu WorkSpaces. • Added full screen mode expansion support on select monitors, if there are more than 2 connected monitors. • Added bi-directional audio/video and webcam redirection support for better conferencing experience. • Added options to display streaming metrics, including frame rate, network latency, and download bandwidth inside their WorkSpaces. ⓘ **Note** Uniform Resource Identifier (URI) is not supported in this version. For more information, see Customize how users log in to their WorkSpaces

WorkSpaces client application for Ubuntu 20.04 release notes

The following table describes the changes to each release of the Ubuntu 20.04 client application.

Release	Date	Changes
2025.1	December 12, 2025	Bug fixes and enhancements.
2025.0	May 28, 2025	• Updated the DCV SDK. • Bug fixes and enhancements.

Release	Date	Changes
2024.8	December 11, 2024	• Added persistent webcam and microphone settings that are saved between DCV WorkSpaces sessions. • Bug fixes and enhancements.
2024.7	October 10, 2024	• Renamed WSP protocol to Amazon DCV protocol. • Added support for streaming over port 443 for TCP and UDP protocols on DCV WorkSpaces. • Added support for certificate-based authentication that enables a single sign-on login experience, with fewer user prompts. • Updated the PCoIP SDK. • Bug fixes and enhancements.
2024.6	September 5, 2024	Bug fixes and enhancements.
2024.5	August 26, 2024	Bug fixes and enhancements.
2024.4	August 15, 2024	Bug fixes and enhancements.
2024.3	August 8, 2024	• Updated DCV SDK. • Updated the PCoIP SDK. • Added support for streaming over TCP/UDP port 443.
2024.2	July 3, 2024	Bug fixes and enhancements.
2024.1	June 11, 2024	• Updated DCV SDK. • Added SAML 2.0 integration support.

Release	Date	Changes
2024.0	February 28, 2024	• Updated DCV SDK. • Updated PCoIP SDK. • Fixed the keyboard capture issue • Added WebAuthn support for in-session authentication • Minor bug fixes and enhancements.
2023.2	December 19, 2023	• Added screen reader and keyboard navigation to improve accessibility. • Added support for AWS GovCloud (US-West) and AWS GovCloud (US-East).
2023.1	November 12, 2023	• Added Uniform Resource Identifier (URI) support. • Fixed Japanese keyboard mapping issue for tilde key. • Added diagnostic log upload support
4.7.0	November 1, 2023	• Added support for Israel (Tel Aviv) Region. • Fixed Japanese keyboard mapping issue for tilde key. • Updated PCoIP SDK for Linux.

Release	Date	Changes
2023.0.4430	August 24, 2023	• Added DCV WorkSpaces connection support, including Windows, BYOL, and Ubuntu WorkSpaces. • (DCV only) Added full screen mode expansion support on select monitors, if there are more than 2 connected monitors. • (DCV only) Added bi-directional audio/video and webcam redirection support for better conferencing experience. • (DCV only) Added options to display streaming metrics, including frame rate, network latency, and download bandwidth inside their WorkSpaces. ⓘ **Note** Uniform Resource Identifier (URI) is not supported in this version. For more information, see Customize how users log in to their WorkSpaces
4.6.0	June 21, 2023	• Improved client custom branding by storing assets in the same AWS Regions as provisioned WorkSpaces. • Resolved image auto-scaling issue with client custom branding logo files. • Fixed Japanese keyboard mapping issues.

Release	Date	Changes
4.5.0	December 27, 2022	• Resolved the issue of users being unable to disconnect from WorkSpaces when their network connectivity was lost or unavailable. • Updated PCoIP SDK for the WorkSpaces Linux client.
4.4.0	October 27, 2022	Ubuntu 20.04 support.

WorkSpaces macOS client application

The following information helps you get started with the WorkSpaces macOS client application.

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Requirements

The Amazon WorkSpaces client for macOS requires an Apple supported version of macOS. For more details, please refer to the [macOS Release Notes](#) on the *Apple Developer Documentation* site.

The versions that are currently supported are listed in the following table:

macOS version	PCoIP	DCV
12 (Monterey) and earlier	Not supported	Not supported
13 (Ventura)	Supported	Supported
14 (Sonoma)	Supported	Supported
15 (Sequoia)	Not supported	Supported

Setup and installation

Download and install the latest version of the Amazon WorkSpaces client application from the [Amazon WorkSpaces Client Download](#) website.

Updating the client application

The Amazon WorkSpaces client application on macOS will automatically check for available updates, and when new versions become available, will install them in the background when you're not using it. Once the installation is complete, you simply need to open the client to begin using the latest version. This will provide you with faster access to the latest features, enhancements, and bug fixes without interrupting your productivity.

> ⓘ **Note**
>
> Automatic client updates are only applied when your client application is used to connect to WorkSpaces in the below regions.

Region	Address
US East (N. Virginia)	us-east-1
US West (Oregon)	us-west-2
Africa (Cape Town)	af-south-1
Asia Pacific (Mumbai)	ap-south-1
Asia Pacific (Seoul)	ap-northeast-2
Asia Pacific (Singapore)	ap-southeast-1
Asia Pacific (Sydney)	ap-southeast-2
Asia Pacific (Tokyo)	ap-northeast-1
Canada (Central)	ca-central-1
Europe (Frankfurt)	eu-central-1
Europe (Ireland)	eu-west-1
Europe (London)	eu-west-2
Europe (Paris)	eu-west-3
Israel (Tel Aviv)	il-central-1
South America (São Paulo)	sa-east-1

In any other regions not listed above, the Amazon WorkSpaces client application on macOS will not update automatically; you will instead see a message when a new version is available, and will have the option to install it.

Determine your client version

To see which version of the WorkSpaces client you have, choose **Amazon WorkSpaces**, **About Amazon WorkSpaces**, or click the gear icon in the upper-right corner and choose **About Amazon WorkSpaces**.

Connect to your WorkSpace

To connect to your WorkSpace, complete the following procedure.

To connect to your WorkSpace for 3.0+ clients

1. The first time that you run the client application, you are prompted for your registration code, which is contained in your welcome email. The WorkSpaces client application uses the registration code and user name to identify which WorkSpace to connect to. When you launch the client application later, the same registration code is used. To enter a different registration code, launch the client application, and then choose **Change Registration Code** at the bottom of the login page.

2. Enter your sign-in credentials in the login screen and choose **Sign In**. If your WorkSpaces administrator has enabled multi-factor authentication for your organization's WorkSpaces, you are prompted for a passcode to complete your login. Your WorkSpaces administrator will provide more information about how to obtain your passcode.

3. If your WorkSpaces administrator has not disabled the **Keep me logged in** feature, you can select the **Keep me logged in** check box at the bottom of the login screen to save your credentials securely so that you can connect to your WorkSpace easily while the client application remains running. Your credentials are securely cached up to the maximum lifetime of your Kerberos ticket.

    After the client application connects to your WorkSpace, your WorkSpace desktop is displayed.

An interruption of network connectivity causes an active session to be disconnected. This can be caused by events such as closing the laptop lid, or the loss of your wireless network connection. The WorkSpaces client application for macOS attempts to reconnect the session automatically if network connectivity is regained within a certain amount of time. The default session resume timeout is 20 minutes, but this timeout can be modified by your network administrator.

Manage your login information (3.0+ clients only)

You can view your registration code and what Region your WorkSpace is in. You can specify whether you want the WorkSpaces client application to save your current registration code, and you can assign a name to your WorkSpace. You can also specify if you want Amazon WorkSpaces to keep you logged in to a WorkSpace until you quit or your login period expires.

To manage your login information for a WorkSpace

1. In the WorkSpaces client application, go to **Settings**, **Manage Login Information**.

2. In the **Manage Login Information** dialog box, you can see the registration code and Region information for your WorkSpace.

3. (Optional) If you want the WorkSpaces client to remember your current registration code, select the **Remember Registration Code** check box.

4. Under **Saved registration codes**, select the WorkSpace you want to name.

5. In the **WorkSpace name** box, enter a name for the WorkSpace.

6. (Optional) If you want WorkSpaces to keep you logged in until you quit or your login period expires, select the **Keep me logged in** check box.

7. Choose **Save**.

Client views

You can switch to full screen mode by choosing **View**, **Enter Full Screen** (3.0+ clients) in the client application menu.

While in full screen mode, you can switch back to window mode by moving the pointer to the top of the screen. The client application menu is displayed, and you can choose **View**, **Leave Full Screen** (3.0+ clients) in the client application menu.

You can also toggle full screen mode by pressing Command+Option+Return.

Client language

You can select the language displayed by the client by performing the following steps.

> **ⓘ Note**
>
> The WorkSpaces client applications support Japanese. However, Japanese WorkSpaces are available only in the Asia Pacific (Tokyo) Region.

To select the client language

1. Depending on which client you're using, do one of the following.

If you're using...	Do this
3.0+ client	In the WorkSpaces client application, go to **Settings**, **Change Language**.

2. Enter your desired language in the **Select a language** list and choose **Save**.

3. Restart the client.

Display support

WorkSpaces WorkSpaces Value, Standard, Performance, Power, PowerPro, and GPU-enabled bundles support a maximum of four displays and a maximum resolution of 3840x2160 (ultra-high definition, or UHD). The maximum supported resolution depends on the number of displays, as shown in the following table.

Displays	Resolution
2	3840x2160
4	1920x1200

> **ⓘ Note**
>
> - You can only extend the display. You cannot duplicate the display. Duplicating the display will cause your session to be disconnected.

The WorkSpaces client application extracts the Extended Display Information Data (EDID) of all attached displays and determines the best compatibility match before starting the session. If you have a high pixel density (high DPI) display, the client application automatically scales the streaming window according to your local DPI settings. For better maximum resolution with high DPI displays, see Enabling high DPI display for WorkSpaces.

> **Note**
>
> If your screen resolution in WorkSpaces is low and objects look blurry, you need to turn on high DPI mode and adjust the display scaling settings on your Mac. For more information, see Enabling high DPI display for WorkSpaces.

To use multiple monitors with WorkSpaces

1. Configure your local machine to use multiple monitors. For more information, see Connect one or more external displays with your Mac in the Apple documentation.
2. Start the WorkSpaces client application and log in to your WorkSpace.
3. Depending on which client you're using, do one of the following:

If you're using...	Do this
3.0+ client	Choose **View**, **Enter Full Screen On All Displays**. You can also toggle full screen mode by pressing Command+Option+Return.

Your WorkSpace should now be extended across your displays. Whichever display you have designated as your primary display is also the primary display in WorkSpaces when you enter full screen mode.

> **Note**
>
> To use full screen mode on only some of the displays in a multiple monitor setup, press and hold the Option key and then click the green maximize button
>
> ⊕
>
> in the top-left corner of the WorkSpaces window. This button expands the WorkSpaces

client window to full size on a screen without extending the WorkSpace to the other displays. To return to the previous window size, press and hold the Option key and click the maximize button again.

Proxy servers

If your network requires you to use a proxy server to access the internet, you can enable your WorkSpaces client application to use a proxy for HTTPS (port 443) traffic. The WorkSpaces client applications use the HTTPS port for updates, registration, and authentication.

> ⓘ **Note**
>
> - The desktop streaming connections to the WorkSpace require ports 4172 and 4195 to be enabled, and do not go through the proxy server.
>
> - Proxy servers that require authentication with a sign-in credentials are not supported.

To use a proxy server for 3.0+ clients

By default, the 3.0+ macOS clients use the proxy server that's specified in the device operating system settings. The first time the client is launched, the device operating system proxy server setting is used. If you select another option for the proxy server, that setting is used for subsequent launches of the client.

> ⓘ **Note**
>
> If you specify a custom proxy server, a "No network" error might appear when you attempt to log in to your WorkSpace. To work around this issue, use the default operating system proxy server instead of specifying a custom proxy server in the macOS client.

1. In the WorkSpaces client application, go to **Settings**, **Manage Proxy Server**.

2. In the **Set Proxy** dialog box, select **Use proxy server**, enter the proxy server URL or IP address and the port, and choose **Save**.

IPv6 network settings

The WorkSpaces client application supports connecting to your WorkSpace via IPv4, IPv6, or dual-stack (both IPv4 and IPv6). By default, IPv4 connections are used for streaming.

To enable an IPv6 connection

1. In the WorkSpaces client application, go to **Settings**, **Manage Connection Settings**.

2. In the **Connection Settings** dialog, under **General Connection Settings**, check the box to **Prefer IPv6-enabled communications**.

   This setting is disabled by default, meaning that your client application will exclusively use an IPv4 network for your connection. If you enable it, your client application will prioritize using an IPv6 network, but will fall back to using an IPv4 network if IPv6 is not available.

Alternatively, organizations may also configure this setting using macOS Defaults:

- Namespace: `com.amazon.workspaces`

- Key: `WSUseDualStackIPv6`

  - Set its value to 1 to enable IPv6 preferred.

  - Set its value to 0 to disable IPv6 preferred (meaning it will use IPv4 exclusively).

- Changes will take effect the next time you launch the WorkSpaces client application. Users can modify this setting, but it will revert to the Defaults value when the client is relaunched.

> ⓘ **Note**
>
> - IPv6 connections are supported on the WorkSpaces client application version `5.30.1` or later.
>
> - IPv6 connection settings need to be changed before connecting to your WorkSpace. They cannot be changed while connected to your WorkSpace.

Command shortcuts

The WorkSpaces macOS client supports the following command shortcuts:

If you're using...	Use these shortcuts
3.0+ client	Command+Q—Quit Amazon WorkSpaces
	Command+Option+Return—Toggle full screen display
	Command+Option+F12—Disconnect session

Remap the Windows logo key or the Command key

By default, the Windows logo key on a Windows keyboard and the Command key on an Apple keyboard are both mapped to the Ctrl key when you're using the Amazon WorkSpaces macOS client application. If you want to change this behavior so that these two keys are mapped to the Windows logo key for use with Windows WorkSpaces, use the following procedure.

To map the Windows logo key or the Command key to the Windows logo key

1. If you haven't already done so, [install or update](#) to version 3.0.5 or later of the Amazon WorkSpaces macOS client application.

2. In the **Finder**, open your **Applications** folder, then open **Utilities**, and choose **Terminal**.

3. In the Terminal window, enter the following command, and then press the Return key.

   ```
   defaults write "com.amazon.Amazon WorkSpaces Client" remap_cmd_to_ctrl 0
   ```

4. In the Terminal app, choose **Terminal**, **Quit Terminal**.

5. If your WorkSpaces macOS client application is running, choose **Amazon WorkSpaces**, **Quit Amazon WorkSpaces** in the client to close the client application.

6. Restart the WorkSpaces macOS client application and log in to your WorkSpace. The Windows logo key or the Command key should now be mapped to the Windows logo key.

Disconnect

To disconnect the macOS client application, you have several options:

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Disconnect WorkSpace**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **End Session**.

  When ending the session, you'll be prompted to save open documents. Selecting **End Session** in the prompt will disconnect you from the WorkSpaces client user session.

  > **ⓘ Note**
  >
  > This option is available only for WorkSpaces Pools.

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Quit Amazon WorkSpaces**. Your WorkSpace session ends, and the client application closes.

- In the Amazon WorkSpaces client application, close the WorkSpaces client window by clicking the red close (X) button in the upper-left corner. This disconnects the session and returns you to the application homepage.

- You can also log off of the WorkSpace. In the Amazon WorkSpaces client application, go to **View**, and then choose **Send Ctrl+Alt+Delete**. Choose **Sign Out**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.

Clipboard support

The clipboard supports a maximum uncompressed object size of 20 MB. For more information, see [the section called "I'm having trouble copying and pasting"](#).

> **ⓘ Note**
>
> When copying from a Microsoft Office app, the clipboard only contains the last copied item, and the item is converted into standard format. If you copy content larger than 890 KB from a Microsoft Office app, the app might become slow or unresponsive for up to 5 seconds.

Diagnostic log upload

Enabling diagnostic log uploads

To troubleshoot issues with the WorkSpaces client, you can enable diagnostic logging. The log files that are sent to WorkSpaces include detailed information about your device and connection to the AWS network. You can enable diagnostic log uploads before or during WorkSpace streaming sessions so that these files are sent to WorkSpaces automatically.

To send log files:

> ⓘ **Note**
>
> You can send log files before and during WorkSpaces streaming sessions.

1. Open your Amazon WorkSpaces client.
2. At the top of the WorkSpaces sign-in page, choose **Manage Diagnostic Logging Settings**.
3. In the pop-up dialog box, choose **Enable Diagnostic Logging for Amazon WorkSpaces** and click **Save**.

> ⚠ **Important**
>
> When you report an issue to AWS support, ensure you keep track of the device ID of the client who is experiencing the issue. This device ID can be found in the diagnostics logging menu, in the WorkSpaces client navigation bar, and it helps the support team identify logs associated with your specific device. Ensure you include the device ID in the tickets that you create regarding this specific issue.

Release notes

The following table describes the changes to each release of the client application.

Release	Date	Changes
5.31.0	January 21, 2026	• Added support for real-time audio optimization for DCV-based WorkSpaces, which

Release	Date	Changes
		routes the audio from web applications running on the WorkSpace to the local device, improving the audio call quality. • Added improved error messaging in the case of a SAML session timeout. • Other bug fixes and enhancements.
5.30.2	November 3, 2025	• Bug fixes and enhancements.
5.30.1	October 21, 2025	• Added support for connecting to your WorkSpace via IPv6.
5.30.0	October 13, 2025	• Improved the international keyboard experience with new keyboard layout options (server or client) with DCV-based WorkSpaces. • Updated the DCV SDK. • Updated the PCoIP SDK. • Updated the .NET Framework.
5.29.1	August 6, 2025	• Bug fixes and enhancements.
5.29.0	July 31, 2025	• Added a new automatic client update feature that automatically checks for available updates and installs them when you're not using the client, helping you to get the latest features and bug fixes. • Bug fixes and enhancements.
5.28.1	July 2, 2025	• Bug fixes and enhancements.
5.27.0	April 30, 2025	• Updated the DCV SDK. • Updated the PCoIP SDK. • Bug fixes and enhancements.

Release	Date	Changes
5.26.2	April 1, 2025	Bug fixes and enhancements.
5.26.0	March 4, 2025	• Updated the DCV SDK. • Updated the .NET SDK. • Bug fixes and enhancements.
5.25.0	December 19, 2024	Bug fixes and enhancements.
5.24.0	November 22, 2024	• Added a progress bar to help users better understand the expected time during the loading of their WorkSpace. • Added a notification to warn idle users they will be disconnected from their DCV WorkSpaces due to inactivity. • Updated the DCV SDK. • Updated the RestSharp library. • Bug fixes and enhancements.
5.23.1	October 17, 2024	Bug fixes and enhancements.
5.23.0	September 30, 2024	• Renamed WSP protocol to Amazon DCV protocol. • Added support for streaming over port 443 for TCP and UDP protocols on DCV WorkSpaces. • Updated the .NET SDK. • Bug fixes and enhancements.
5.22.1	September 3, 2024	Bug fixes and enhancements.
5.22.0	August 16, 2024	Updated the DCV SDK.
5.21.0	July 3, 2024	Bug fixes and enhancements.

Release	Date	Changes
5.20.0	June 13, 2024	• Updated PCoIP SDK. • Updated DCV SDK. • Migrated the software framework to .NET 8 LTS. • Updated system to require macOS 12 or later.
5.19.3	April 30, 2024	Fixed issue where users get immediately disconnected from their DCV WorkSpaces when connecting to it.
5.19.0	February 28, 2024	• Added WebAuthn support for in-session authentication. • Resolved a white screen issue for DCV WorkSpaces. • Fixed the pixelation issue for DCV WorkSpaces. • Resolved crash issues for DCV WorkSpaces. • Updated DCV SDK.
5.18.0	January 22, 2024	• Updated PCoIP SDK. • Updated DCV SDK. • Added support for macOS 14 (Sonoma). • Fixed keyboard issue where the first keystrokes were not being transmitted after unlocking the screen.

Release	Date	Changes
5.17.0	November 16, 2023	• Fixed a login issue due to a custom proxy error on macOS Ventura. • Added support to configure option key behavior on DCV client. • Fixed a client crash when users change running mode. • Fixed the screen freezing issue when using a Smart Card on DCV client. • Improve stability during resizes on DCV client. • Improved visual accessibility.
5.16.0	October 26, 2023	• Improved visual accessibility. • Updated DCV SDK.
5.15.1	September 20, 2023	• Enabled persistent Webcam connection after fast DCV WorkSpace reconnection. • Fixed connectivity issues on DCV WorkSpace s when using a proxy server. • Updated DCV SDK. • Bug fixes and enhancements.
5.12.0	August 29, 2023	• Updated PCoIP SDK and DCV SDK. • Resolved an login page special character processing issue. • Added a link to Amazon WorkSpaces user guide under the Support menu.
5.11.0	June 29, 2023	Added options to enable or disable **Ctrl** + left-click as right-click and enable or disable mapping the **Command** key to the **Ctrl** key. To access both options, from the menu bar, choose **Settings**, **Manage Modifier Keys**.

Release	Date	Changes
5.10.0	June 19, 2023	• Improved client custom branding by storing assets in the same AWS Regions as provisioned WorkSpaces. • Resolved black screen issue when using multiple monitors with Ubuntu WorkSpaces. • Fixed client diagnostic log uploading issues, where proxy settings were not being persisted when connecting to WorkSpaces through a proxy server. • Added support for DCV extension SDK, which allows end users to customize their DCV WorkSpaces experience.
5.9.0	May 9, 2023	Updated DCV SDK to fix playback volume issues.
5.8.0	April 6, 2023	• Added accessibility improvements. • Added support for automatic diagnostic log uploads feature, which allows you to upload WorkSpaces client log files directly to WorkSpaces to troubleshoot issues without interrupting the use of the WorkSpaces client. • Updated the DCV v2 SDK to fix InSession Latency reporting.
5.7.0	February 23, 2023	• Updated the DCV SDK. • Enabled trimming leading or trailing allow list in sign-in credentials.

Release	Date	Changes
5.6.0	December 27, 2022	• Added support for certificate-based authentication via SAML 2.0 integration, which removes the logon prompt for the Active Directory domain password. • Resolved the issue of the Workspace menu bar being inaccessible when maximizing the Workspace application window. • Updated PCoIP SDK for the WorkSpaces macOS client.
5.5.0	November 14, 2022	Updated the DCV client SDK.
5.4.0	November 10, 2022	Added a shortcut **Command+Alt+F12** to disconnect your WorkSpaces.
5.3.0	September 15, 2022	Bug fixes and enhancements.
5.2.0	August 24, 2022	Fixed WorkSpaces login issue when using Smart Card.
5.1.0	June 30, 2022	Updated PCoIP SDK for MacOS.
4.0.7	March 3, 2022	Fixed a WorkSpaces connection error caused by the Proxy settings on MacBook.
4.0.6	December 21, 2021	• Resolves crashes and black screen issues related to video streaming for DCV • Updates to DCV version 1.9.8.18175
4.0.5	November 23, 2021	• Optimizes the bandwidth and frame rates for DCV WorkSpaces • Resolves the shortcut mapping issue related to full screen mode

Release	Date	Changes
4.0.4	November 3, 2021	• Resolves the spinning wheel problem on the Login screen in macOS Big Sur with PCoIP WorkSpaces • Video streaming improvements for WorkSpaces that support DCV • Bug fixes
4.0.3	October 4, 2021	Bug fixes and enhancements.
4.0.2	September 8, 2021	Minor bug fixes and enhancements.
4.0.1	August 5, 2021	Minor bug fixes and enhancements.
3.1.9	June 29, 2021	Minor bug fixes and enhancements.
3.1.8	May 28, 2021	• Addresses a crash issue after disconnecting from PCoIP WorkSpaces • Addresses a connectivity issue with DCV WorkSpaces on M1 Mac hardware • Minor bug fixes and enhancements
3.1.7	April 29, 2021	• Improves connectivity with WorkSpaces using the DCV • Minor bug fixes and enhancements
3.1.6	April 8, 2021	Fixes for disconnects and crashes resulting from DCV audio traffic optimization

Release	Date	Changes
3.1.5	April 2, 2021	• Adds in-session and pre-session support for Common Access Card (CAC) and Personal Identity Verification (PIV) smart cards with DCV Windows WorkSpaces • Bidirectional video webcam support is now generally available for Windows WorkSpaces using the DCV • Minor bug fixes and enhancements
3.1.4	March 16, 2021	• Addresses a few crash scenarios when users register, log in, and rebuild • Adds localization support for more UI elements • Minor bug fixes and enhancements
3.1.3	February 15, 2021	• Adds support for mouse middle button dragging • Minor bug fixes and enhancements
3.1.2	January 8, 2021	• The DCV is now generally available. Video-in functionality continues to be available as a beta feature on DCV WorkSpaces only • Minor bug fixes and enhancements
3.1.0	December 1, 2020	Minor bug fixes and enhancements

Release	Date	Changes
3.0.12	November 10, 2020	• Adds enhancements to the session reconnect experience • Improves error messaging during session disconnects for DCV WorkSpaces • Fixes keyboard mapping issue with the **Shift** key for DCV WorkSpaces • Fixes an issue in the device-enumeration logic where video-in devices might not be shown on subsequent logins for DCV WorkSpaces
3.0.11	October 02, 2020	• Resolves an intermittent crash issue when disconnecting from a DCV WorkSpace • Minor bug fixes and enhancements
3.0.10	September 16, 2020	Adds support for health checks over port 4195 (UDP and TCP)
3.0.9	August 14, 2020	Minor bug fixes and enhancements
3.0.8	July 30, 2020	• For improved diagnostics, displays round trip time (RTT) as part of the network health check information • Minor bug fixes and enhancements
3.0.7	June 3, 2020	• Adds support for multiple monitors on DCV WorkSpaces • Minor bug fixes and enhancements
3.0.6	April 28, 2020	• Adds support for toggling between high DPI and standard DPI displays • Minor bug fixes and enhancements

Release	Date	Changes
3.0.5	March 30, 2020	• Resolves an issue with the user interface displaying a login prompt if single sign-on (SSO) is enabled for Amazon WorkDocs • Adds support to map the Command key to the Windows logo key
3.0.4	March 3, 2020	• Adds support for connecting to DCV WorkSpaces • Minor bug fixes and enhancements
3.0.3	February 24, 2020	Improves readability on high DPI devices
3.0.2	February 14, 2020	• Adds keyboard shortcut to toggle full screen display • Minor bug fixes and enhancements
3.0.0	November 25, 2019	• Improved user interface • Friendly registration code labels • Client-side GPU rendering • Minor bug fixes and enhancements
2.5.11	November 4, 2019	• Resolves issues with support for the macOS Catalina keyboard • Minor bug fixes
2.5.9		Minor bug fixes
2.5.8		• Resolves an intermittent crashing issue related to computer waking up when opening a laptop lid
2.5.7		• Adds support for German keyboard layouts with Linux WorkSpaces • Resolves an issue that results in a crash of Excel with clipboard direction

Release	Date	Changes
2.5.6		Minor fixes
2.5.5		• Resolves an issue with sub-optimal resolution with external displays in full-screen mode connected using USB-C • Minor bug fixes
2.5.2		• Resolves an issue that results in crashes when multiple monitors are used and clients are connected to WorkSpaces running Amazon Linux 2 • Resolves an intermittent issue with the Caps lock key becoming stuck • Minor bug fixes
2.5.1		• Resolves an issue that periodically results in repeated key presses with WorkSpaces running Amazon Linux 2 • Adds support for localized date and time formats in the user interface • Adds handling for URIs that end with an extra '/' • Minor user interface improvements
2.5.0		Adds support for user self-service WorkSpace management capabilities
2.4.10		Minor fixes
2.4.9		Minor fixes

Release	Date	Changes
2.4.8		• Adds support for uniform resource identifiers (URIs), which enable login orchestration • Improves the behavior of function (Fn) keys on macOS • Improves protocol handling • Minor fixes
2.4.7		• Adds support for time zone redirection for more Regions: America/Indianapolis America/Indiana/Marengo America/Indiana/Vevay America/Indiana/Indianapolis • Includes text changes to the Login page user interface
2.4.6		• Adds support for configuring the logging level to include advanced logging for debug scenarios • Minor improvements to session provision handling • Increases error handling for keyboard connections
2.4.4		• Minor fixes • Improves copy and paste
2.4.2		Minor fixes
2.4.0		• New logo • Improves the user interface and stability
2.3.7		• Addresses a gray screen issue that occurs when displays are in different orientations • Resolves a crashing issue on macOS

Release	Date	Changes
2.3.6		Localization enhancements
2.3.5		Minor improvements
2.3.3		• Improves support for multiple monitors • Localization enhancements • Improves security and performance
2.3.1		Minor fixes
2.3.0		• Improves support for multiple monitors • Improves security and stability
2.2.3		Resolves minor bugs and improves stability
2.2.1		• Adds support for the German language • Resolves issues with time zone mapping for some Regions • Resolves a connection issue on Russian systems • Improves the Japanese user interface • Improves stability
2.1.4		Resolves a crash issue on macOS Sierra
2.1.3		Closing the client expires the reconnect token. You can easily reconnect to your WorkSpace as long as the client is running.
2.1.0		• Adds support for the following new WorkSpace states: STOPPING and STOPPED • Resolves minor bugs and improves stability

Release	Date	Changes
2.0.8		• Resolves an issue with out-of-app keyboard input passing to WorkSpaces • If Remember Me is disabled, the user name is not shown on restart • Adds a confirmation dialog box when deleting a registration code • Improves stability
2.0.4		• Adds support for audio in, enabling you to make calls or attend web conferences • Adds support for devices with high DPI screens • Adds support for saving registration codes, enabling you to switch WorkSpaces without re-entering the registration codes • Improves support for OS X El Capitan • Improves usability and stability
1.1.80		• Adds CloudWatch metrics for session latency, session launch time, and session disconnects • Improves auto session resume so that you are interrupted less frequently when network conditions are degraded • Resolves specific issues and improves stability

Release	Date	Changes
1.1.6		- Adds support for status notifications. The client application notifies you about the state of your WorkSpace when it cannot connect to the WorkSpace. - Improves the reconnect experience. The client automatically redirects to the login screen after 10 hours of inactivity. You can reconnect again if the client fails to launch a session using reconnect. - Adds support for auto session resume. The client application automatically attempts to resume your session if network connectivity is lost and then regained within the session resume timeout (default value is 20 minutes). - Improves network health checks so they are faster and more reliable - Adds client-side validation of registration codes - Improves the synchronization of Caps Lock and Num Lock status between the local device and the WorkSpace
1.1.4		- Adds support for saving your credentials, enabling you to easily reconnect to your WorkSpace - Improves advanced connection health checks - Improves stability

Release	Date	Changes
1.0.8		• Introduces a full-file installation package • Improves network connectivity checks • Adds version information to the **About** window
1.0		Initial release

WorkSpaces PCoIP zero client

You can set up and use a PCoIP zero client device with WorkSpaces.

Requirements

To use a PCoIP zero client with WorkSpaces, you need the following:

- PCoIP zero clients are compatible only with WorkSpaces that are using the PCoIP protocol.
- Your Tera2 zero client device must have firmware version 6.0.0 or later. If your Tera2 zero client device has a firmware version between 4.6.0 and 6.0.0, your WorkSpaces administrator must upgrade your device firmware through a Desktop Access subscription at https://www.teradici.com/products/zero-clients#buy.
- WorkSpaces multi-factor authentication (MFA) requires a Tera2 zero client device with firmware version 6.0.0 or later.
- Your WorkSpaces administrator might need to enable your zero client device to use USB printers and other USB peripheral devices. If you're having trouble using a USB printer or other USB peripheral devices, contact your WorkSpaces administrator for assistance. For more information, see USB printers and other USB peripherals aren't working for PCoIP zero clients in the *Amazon WorkSpaces Administration Guide*.

For a list of approved PCoIP zero client devices, see PCoIP Zero Clients on the Teradici website.

Connect to your WorkSpace

If your zero client device has firmware version 6.0.0 or later, you can connect to your WorkSpace. If your zero client device has a firmware version between 4.6.0 and 6.0.0, your WorkSpaces

administrator must upgrade your device firmware through a Desktop Access subscription at
https://www.teradici.com/desktop-access.

To connect to your WorkSpace

1. From the PCoIP zero client device, choose **Options**, **Configuration**, **Session**, and choose the **OSD: WorkSpaces Session Settings** connection type.

2. Enter the registration code from your welcome email.

3. Enter a name for this registered WorkSpace.

4. Choose **Connect**.

Disconnect from the zero client

To disconnect the zero client from your WorkSpace, you can press Ctrl+Alt+F12. Alternatively, you can log off of the WorkSpace, which disconnects the client.

IPv6 network settings

The WorkSpaces PCoIP zero client application supports connecting to your WorkSpace via IPv4, IPv6, or dual-stack (both IPv4 and IPv6).

You can refer to the PCoIP Zero Client documentation to [configure IPv6 settings](#).

> **ⓘ Note**
>
> - IPv6 connections are supported on the Zero Client firmware version 25.10 or later.
> - When IPv6 is enabled for a Zero client application, the system will exclusively use IPv6 networking and will not automatically switch to IPv4 if an IPv6 connection is unavailable.

WorkSpaces Web Access

> **ⓘ Note**
>
> As of November 7, 2025, Amazon WorkSpaces PCoIP Web Access is no longer open to new customers. The feature will only receive critical functional and security updates going

forward. While existing users can continue using the feature, new users will not be able to connect to their PCoIP WorkSpaces using Web Access.

For continued Web Access usage, we recommend evaluating [migration to DCV protocol](#), which has Web Access support that offers improved performance and enhanced features including SAML and certificate-based authentication. Alternatively, PCoIP users can switch to [WorkSpaces client applications](#) for full feature support.

You can access your DCV-based Windows and Linux-based WorkSpaces from the convenience of your web browser. You may choose this option if you prefer not to install one of the Amazon WorkSpaces client applications, or if you are accessing your WorkSpace from a personal device.

The following information will help you get started with WorkSpaces web access.

Requirements

- Your administrator must enable web access on your WorkSpace. For more information, check with your administrator or see [Enable and Configure WorkSpaces Web Access](#) in the Amazon WorkSpaces Administration Guide.

- Web access is supported with DCV-based WorkSpaces where the WorkSpace is running Windows or Linux.

  - On Windows, macOS, and Linux devices: Web access for Amazon DCV is supported on Google Chrome, Microsoft Edge, Apple Safari and Mozilla Firefox browsers when running on the latest three browser versions.

  - On Android tablets, Chromebooks, and iPads: Web access for Amazon DCV is supported on Google Chrome and Apple Safari browsers when running on the latest three browser versions.

- Web access for PCoIP-based WorkSpaces has the following limitations:

  - Web access for PCoIP is not supported in the AWS GovCloud (US), Asia Pacific (Mumbai), Africa (Cape Town), Israel (Tel Aviv), or Europe (Paris) regions.

  - Web access for PCoIP is only supported for Windows-based WorkSpaces, not Linux-based WorkSpaces.

  - Web access for PCoIP is only supported on Google Chrome and Mozilla Firefox browsers on Windows, macOS and Linux devices when running on the latest three browser versions.

  - Web access for PCoIP does not support multiple monitors.

  - Web access for PCoIP does not support connecting to GPU-enabled WorkSpaces.

> ⓘ **Note**
>
> YUV444 encoding is not supported with WorkSpaces web access. If your administrator uses a Group Policy setting to enable YUV444 encoding, this may cause issues during login or rendering issues during your session.

Contents

- [Display support](#)
- [Proxy servers](#)
- [Supported features for DCV-based WorkSpaces](#)
- [Supported features and gestures on Android tablets and iPads](#)
- [Enabling diagnostic log uploads](#)

Display support

WorkSpaces Web Access supports up to two monitors when connecting to DCV-based WorkSpaces.

Proxy servers

If you are required to use a proxy server to access the internet, you can configure your browser to use the proxy server.

Requirements

- Proxy with authentication is not currently supported.
- Proxy server support for Web Access may vary by browser. Refer to your browser's proxy settings for more information.

Supported features for DCV-based WorkSpaces

The following features are supported for DCV-based WorkSpaces.

Copying and pasting

You can use the web client to copy and paste plain text and PNG images between your local device and the WorkSpaces session. On Google Chrome and Microsoft Edge, you can use keyboard

shortcuts and context (right-click) menu to copy and paste text and images. On Mozilla Firefox and Apple Safari you can use the clipboard dialog to copy and paste plain text; images are not supported.

Using a webcam

Webcam functionality is supported on Google Chrome and Microsoft Edge. On Mozilla Firefox, webcams are supported with Windows-based WorkSpaces only. Webcams are not supported on Apple Safari.

Selecting the webcam you want to use

1. Choose the drop-down with your **Workspaces Name** on the top right of your WorkSpaces session, and then choose **Preferences**.

2. Choose the **Audio and Video** tab, scroll down to **Camera**, and then select the camera to use.

3. Select **Save**.

> ⓘ **Note**
>
> Cameras will appear only if your administrator has enabled webcam support for your WorkSpace. You can't change the webcam selection while the webcam is in use.

Using a webcam during your session

Toggle the webcam button in the client toolbar as shown below to enable or disable your webcam during your session. The webcam button appears on the toolbar only if webcam support is enabled and at least one webcam is connected to your local device.

The following table shows different webcam states:

Icon	Description
📷	The webcam is disabled. Toggle the button to enable the webcam. If you didn't previously

Icon	Description
	select the webcam to use, the default webcam is used.
![webcam disabled icon]	The webcam is enabled, but it's not in use. Toggle the button to disable the webcam.
![webcam in use icon]	The webcam is in use by a remote application in the WorkSpaces session. Toggle the button to disable the webcam.

Using multiple screens

To use multiple screens, choose the multiscreen button in the client as shown in the following example. Multiple screens are supported with up to two monitors.

Supported features and gestures on Android tablets and iPads

Android tablets are supported on Google Chrome, and iPads are supported on Apple Safari. Touch input is supported for both device types.

Gestures

- Use a two-finger single tap gesture or use the client toolbar button to toggle the on-screen keyboard.
- Use a pinch gesture to zoom in our out on the screen. When zoomed in, use a two-finger slide gesture to pan the screen horizontally or vertically.
- Use a three-finger single tap gesture to show the client toolbar when it has been hidden by auto-hide.

Trackpad mode

- To enable track pad mode, choose the drop-down with your **WorkSpace Name** on the top right of your WorkSpaces session, and then choose **Enable trackpad mode**.
- Once trackpad mode is enabled:

- Use a short one-finger tap to trigger a mouse left click.

- Use a longer one-finger tap to trigger a mouse right click.

Screen resolution and other functionality

- Your screen resolution may be automatically adjusted to fit the tablet screen size.

- If you rotate the tablet device, the screen will automatically resize itself.

- Full screen is not supported on Apple Safari on iPads.

Enabling diagnostic log uploads

To troubleshoot issues with WorkSpaces web access, you can enable diagnostic logging. The log files that are sent to AWS include detailed information about your device and connection to the AWS network. You can enable automatic diagnostic log uploads before or during your WorkSpace streaming sessions.

To send log files

1. Open the Amazon WorkSpaces Web Access page. If you're currently in your WorkSpaces session, disconnect from it so you return to the pre-session page.

2. At the top of the pre-session page, choose **Settings**, then **Diagnostic logging**.

3. Ensure **Diagnostic logging** is enabled.

4. (Optional) To generate debugging-level details and verbose performance data, choose **Advanced logging**.

WorkSpaces Windows client application

The following information will help you get started with the WorkSpaces Windows client application.

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- [Setup and installation](#)
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- [Client application updates](#)

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- [Diagnostic log upload](#)

- [Release notes](#)

Requirements

- The Amazon WorkSpaces client for Windows requires a Microsoft supported version of Windows 11 or Windows 10. For more details, please see Microsoft's guidance here: [Windows 11 release information](#) or [Windows 10 release information](#).

Setup and installation

Download and install the latest version of the Amazon WorkSpaces client application from [Amazon WorkSpaces Client Download](#).

You have two choices for how to install the Amazon WorkSpaces client application:

- **Install just for you**. If you choose this option and you share your local machine with other users, the WorkSpaces client application is available only to you. If other users on the machine also want to use the WorkSpaces client application, they must install the application for their own use.

- **Install for all users of this machine**. If you choose this option, the WorkSpaces client application is available to anyone who logs on to the local machine, including those with Guest accounts.

Installing the WorkSpaces client application for all users requires you to have administrator privileges on your local machine. Depending on how your local machine is configured, you might not have such privileges. In that case, you can install the WorkSpaces client application just for yourself. If you have questions about which option to choose, ask your WorkSpaces administrator for guidance.

Installing the USB redirection driver

To use your local USB devices on the remote session, you will need to install the USB redirection driver. To install this driver, you will need to install the WorkSpaces application for all users, and then check the box to **Install driver for USB redirection**.

Determine your client version

To see which version of the WorkSpaces client you have, choose **Amazon WorkSpaces**, **About Amazon WorkSpaces**, or click the gear icon in the upper-right corner and choose **About Amazon WorkSpaces**.

Client application updates

The Amazon WorkSpaces client application on Windows will automatically check for available updates, and when new versions become available, will install them in the background when you're not using it. Once the installation is complete, you simply need to open the client to begin using the latest version. This will provide you with faster access to the latest features, enhancements, and bug fixes without interrupting your productivity.

Client updates maintain the same installation context as the original installation. This means if the Amazon WorkSpaces client was originally installed for all users on the local machine, future automatic updates will apply to all users. Similarly, if the client was installed for a single user, future updates will only apply to that specific user. Should you need to change this behavior, you can uninstall the client application and reinstall it under your preferred installation context.

> ⓘ **Note**
>
> Automatic client updates are only applied when your client application is used to connect to WorkSpaces in the following regions.

AWS Region	Address
US East (N. Virginia)	us-east-1
US West (Oregon)	us-west-2
Africa (Cape Town)	af-south-1
Asia Pacific (Mumbai)	ap-south-1
Asia Pacific (Seoul)	ap-northeast-2
Asia Pacific (Singapore)	ap-southeast-1
Asia Pacific (Sydney)	ap-southeast-2
Asia Pacific (Tokyo)	ap-northeast-1
Canada (Central)	ca-central-1
Europe (Frankfurt)	eu-central-1
Europe (Ireland)	eu-west-1
Europe (London)	eu-west-2
Europe (Paris)	eu-west-3
Israel (Tel Aviv)	il-central-1
South America (São Paulo)	sa-east-1

In any other regions not listed above, the Amazon WorkSpaces client application on Windows will not update automatically; you will instead see an message when a new version is available, and will have the option to install it.

Opting out from automatic updates (Windows client only)

We encourage you to take advantage of the new automatic client update feature so you always have access to the latest features, security patches, and bug fixes. However, if you or your

administrator want to manage client updates manually, you can opt out by following these steps
for Windows clients.

> ⓘ **Note**
>
> Opting out from automatic updates is supported for the Windows client application only.

Administrator privileges are required on the local device.

To disable automatic updates:

1. Open the by Type "registry editor" in the Windows search box.

2. Right-click on **Registry Editor** and select **Run as administrator**.

3. If prompted for permission, choose **Yes**.

4. Open a command line.

5. Navigate to: `Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Amazon\`.

6. If it does not already exist, create a new Key called "Amazon WorkSpaces Client".

7. Within this key, create a new String Value named "clientUpgradeDisabled" and set its value to
   1.

8. Either restart your computer or do the following to apply the changes:

   1. Open the **Task Manager**.

   2. Go to the **Processes** tab.

   3. Search for one of the following:

      - For an "all users" installation, search for `WorkSpacesService.exe`.

      - For a "single user" installation, search for `WorkSpacesHelper.exe`.

   4. Right-click and select **End process**.

9. For organizations managing multiple Windows devices, this registry setting can be deployed
   using Group Policy:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Amazon\Amazon WorkSpaces Client\clientUpgradeDisabled
   Type: REG_SZ
   Value: 1
   ```

IPv6 network settings

The WorkSpaces Windows client application supports connecting to your WorkSpace using IPv4, IPv6, or dual-stack (both IPv4 and IPv6) addresses. By default, IPv4 connections are used for streaming. IPv6 connections are disabled by default, meaning that your client application will exclusively use an IPv4 network for your connection. If you enable IPv6 connections, your client application will prioritize using an IPv6 network, but will fall back to using an IPv4 network if IPv6 is not available.

> ⓘ **Note**
>
> IPv6 connections are supported on the WorkSpaces client application version 5.30.1 or later.
> You cannot change IPv6 connection settings if you are connected to your WorkSpace. Change the setting before connecting to your WorkSpace.

Use the following procedure to enable IPv6 connections.

To enable an IPv6 connection

1. In the WorkSpaces client application, navigate to **Settings >, Manage Connection Settings**.

2. Under **General Connection Settings**, choose **Prefer IPv6-enabled communications**.

Alternatively, you can also enable IPv6 connections by using the following registry key:

1. On the Windows client, enter `registry editor` in the Windows search bar.

2. Right-click on **Registry Editor** and select **Run as administrator**.

3. If prompted for permission, choose **Yes**.

4. In the Registry Editor, navigate to: `Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Amazon \Amazon WorkSpaces Client\`

5. Within this key, create a new DWORD (Double Word) Value named `WSUseDualStackIPv6`.

   - Set its value to 1 to enable IPv6 preferred connections.

     Set its value to 0 to disable IPv6 preferred connection, and enable IPv4 connections exclusively.

6.   Changes you make will take effect the next time you launch the WorkSpaces client application. Users can modify this setting, but it will revert to the default registry key value when the client is relaunched.

Connect to your WorkSpace

To connect to your WorkSpace, complete the following procedure.

To connect to your WorkSpace for 3.0+ clients

1.   The first time that you run the client application, you are prompted for your registration code, which is contained in your welcome email. The WorkSpaces client application uses the registration code and user name to identify which WorkSpace to connect to. When you launch the client application later, the same registration code is used. To enter a different registration code, launch the client application, and then choose **Change Registration Code** at the bottom of the login page.

2.   Enter your sign-in credentials in the login screen and choose **Sign In**. If your WorkSpaces administrator has enabled multi-factor authentication for your organization's WorkSpaces, you are prompted for a passcode to complete your login. Your WorkSpaces administrator will provide more information about how to obtain your passcode.

3.   If your WorkSpaces administrator has not disabled the **Keep me logged in** feature, you can select the **Keep me logged in** check box at the bottom of the login screen to save your credentials securely so that you can connect to your WorkSpace easily while the client application remains running. Your credentials are securely cached up to the maximum lifetime of your Kerberos ticket.

     After the client application connects to your WorkSpace, your WorkSpace desktop is displayed.

An interruption of network connectivity causes an active session to be disconnected. This can be caused by events such as closing the laptop lid, or the loss of your wireless network connection. The WorkSpaces client application for Windows attempts to reconnect the session automatically if network connectivity is regained within a certain amount of time. The default session resume timeout is 20 minutes, but this timeout can be modified by your network administrator.

Manage your login information (3.0+ clients only)

You can view your registration code and what Region your WorkSpace is in. You can specify whether you want the WorkSpaces client application to save your current registration code, and you can assign a name to your WorkSpace. You can also specify if you want Amazon WorkSpaces to keep you logged in to a WorkSpace until you quit or your login period expires.

To manage your login information for a WorkSpace

1. In the WorkSpaces client application, go to **Settings**, **Manage Login Information**.

2. In the **Manage Login Information** dialog box, you can see the registration code and Region information for your WorkSpace.

3. (Optional) If you want the WorkSpaces client to remember your current registration code, select the **Remember Registration Code** check box.

4. Under **Saved registration codes**, select the WorkSpace that you want to name.

5. In the **WorkSpace name** box, enter a name for the WorkSpace.

6. (Optional) If you want WorkSpaces to keep you logged in until you quit or your login period expires, select the **Keep me logged in** check box.

7. Choose **Save**.

Client views

You can switch to full screen mode by choosing **View**, **Enter Full Screen** (3.0+ clients) in the client application menu.

While in full screen mode, you can switch back to window mode by moving the pointer to the top of the screen. The client application menu is displayed, and you can choose **View**, **Leave Full Screen** (3.0+ clients) in the client application menu.

You can also toggle full screen mode by pressing Ctrl+Alt+Enter.

Client language

You can select the language displayed by the client by performing the following steps.

> **ⓘ Note**
>
> The WorkSpaces client applications support Japanese. However, Japanese WorkSpaces are available only in the Asia Pacific (Tokyo) Region.

To select the client language

1. Depending on which client you're using, do one of the following.

If you're using...	Do this
3.0+ client	In the WorkSpaces client application, go to **Settings**, **Change Language**.

2. Enter your desired language in the **Select a language** list and choose **Save**.

3. Restart the client.

Display support

WorkSpaces WorkSpaces Value, Standard, Performance, Power, PowerPro, and GPU-enabled bundles support a maximum of four displays and a maximum resolution of 3840x2160 (ultra-high definition, or UHD). The maximum supported resolution depends on the number of displays, as shown in the following table.

Displays	Resolution
2	3840x2160
4	1920x1200

> **ⓘ Note**
>
> - You can only extend the display. You cannot duplicate the display. Duplicating the display will cause your session to be disconnected.

The WorkSpaces client application extracts the Extended Display Information Data (EDID) of all attached displays and determines the best compatibility match before starting the session. If you have a high pixel density (high DPI) display, the client application automatically scales the streaming window according to your local DPI settings. For better maximum resolution with high DPI displays, see Enabling high DPI display for WorkSpaces.

To use multiple monitors with WorkSpaces

1. Configure your local machine to use multiple monitors. For more information, see How to use multiple monitors in Windows 10 in the Microsoft documentation.

2. Start the WorkSpaces client application and log in to your WorkSpace.

3. Depending on which client you're using, do one of the following:

If you're using...	Do this
3.0+ client	Choose **View**, **Enter Full Screen On All Displays**. You can also toggle full screen mode by pressing Ctrl+Alt+Enter.

Your WorkSpace should now be extended across your displays. Whichever display you have designated as your primary display is also the primary display in WorkSpaces when you enter full screen mode.

> **ⓘ Note**
>
> Using full screen mode on only some of the displays in a multiple monitor setup isn't possible. You can, however, press the Windows logo key + Up Arrow or use the maximize button in the upper-right corner of the WorkSpaces window to maximize the WorkSpaces client window on a display without extending the WorkSpace to the other displays.

Proxy servers

If your network requires you to use a proxy server to access the internet, you can enable your WorkSpaces client application to use a proxy for HTTPS (port 443) traffic. The WorkSpaces client applications use the HTTPS port for updates, registration, and authentication.

> ℹ️ **Note**
>
> - The desktop streaming connections to the WorkSpace require ports 4172 and 4195 to be enabled, and do not go through the proxy server.
> - Proxy servers that require authentication with sign-in credentials are not supported.

To control the proxy server for 3.0+ clients

By default, the 3.0+ Windows clients use the proxy server that's specified in the device operating system settings. The first time the client is launched, the device operating system proxy server setting is used. If you select another option for the proxy server, that setting is used for subsequent launches of the client. If a proxy server is specified at both the operating system level and in the WorkSpaces client, the client setting is used.

Starting with version 3.0.12 of the Windows client, you can also choose not to use a proxy server.

> ℹ️ **Note**
>
> In versions 3.0.0 through 3.0.11, if you specify a custom proxy server, a "No network" error might appear when you attempt to log in to your WorkSpace. If you want to use a custom proxy server with the Windows client, we recommend upgrading to the latest version.

1. In the WorkSpaces client application, go to **Settings**, **Manage Proxy Server**.

2. In the **Set Proxy** dialog box, select the appropriate options, depending on which version of the 3.0+ client you have.

   - **Windows client version 3.1.3 or later** — To disable usage of a proxy server, select **Don't use proxy server**. If you select **Don't use proxy server**, no proxy server is used when you access the internet.

     To use a proxy server, choose one of the following options, and then choose **Save**:

     - **Use your device operating system settings** — This option uses the proxy server settings for your operating system.

     - **Customize proxy server for WorkSpaces** — Enter the URL or IP address and the port for your custom proxy server.

- **Windows client versions 3.0.12, 3.1.0, and 3.1.2** — To enable or disable usage of a proxy server, select or deselect **Use proxy server**. If you deselect **Use proxy server**, no proxy server is used when you access the internet.

  If you've selected **Use proxy server**, choose one of the following options, and then choose **Save**:

  - **Use your device operating system settings** — This option uses the proxy server settings for your operating system.

  - **Customize proxy server for WorkSpaces** — Enter the URL or IP address and the port for your custom proxy server.

- **Windows client version 3.0.11 or earlier** — By default, these versions of the client use the proxy server specified in the device operating system settings. To use a custom proxy server, choose **Use proxy server**, enter the URL or IP address and the port for the proxy server, and then choose **Save**.

Command shortcuts

The WorkSpaces Windows client supports the following command shortcuts:

- Ctrl+Alt+Enter—Toggle full screen display
- Ctrl+Alt+F12—Disconnect session

Disconnect

To disconnect the Windows client application, you have several options:

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Disconnect WorkSpace**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **End Session**.

  When ending the session, you'll be prompted to save open documents. Selecting **End Session** in the prompt will disconnect you from the WorkSpaces client user session.

> **Note**
>
> This option is available only for WorkSpaces Pools.

- In the Amazon WorkSpaces client application, go to **Amazon WorkSpaces**, and then choose **Quit Amazon WorkSpaces**. Your WorkSpace session ends, and the client application closes.

- In the Amazon WorkSpaces client application, close the WorkSpaces client window by clicking the close (X) button in the upper-right corner. This disconnects the session and returns you to the application homepage.

- You can also log off of the WorkSpace. In the Amazon WorkSpaces client application, go to **View**, and then choose **Send Ctrl+Alt+Delete**. Choose **Sign Out**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.

Clipboard support

The clipboard supports a maximum uncompressed object size of 20 MB. For more information, see [the section called "I'm having trouble copying and pasting"](#).

> **Note**
>
> When copying from a Microsoft Office app, the clipboard only contains the last copied item, and the item is converted into standard format. If you copy content larger than 890 KB from a Microsoft Office app, the app might become slow or unresponsive for up to 5 seconds.

Manage hardware acceleration

Starting with version 5.0.0, hardware acceleration is enabled by default when you're using the Amazon WorkSpaces Windows client application.

> **Note**
>
> If you plan to upgrade to a version between 3.1.4 and 5.0.0, and if you've disabled hardware acceleration for version 3.1.3 or earlier by using the [procedure described later in this section](#), make sure that you re-enable hardware acceleration in Windows by setting the

> **DisableHWAcceleration** registry key to **0**. Then you can upgrade to a version between 3.1.4
> and 5.0.0 of the WorkSpaces Windows client application.

If you're experiencing high CPU usage or slower performance when using the client, you might
want to enable hardware acceleration in the client.

> ⓘ **Note**
>
> If you enable hardware acceleration in the Windows client, the following issues might occur
> with a few video driver versions:
>
> - The screen might have flickering black boxes in some places.
> - The screen might not properly update on the WorkSpaces login page, or it might not
>   properly update after you log in to your WorkSpace. You might see artifacts on the
>   screen.
> - Your mouse clicks might not be lined up with the cursor position on the screen.

To enable hardware acceleration in version 3.1.5 or later of the Windows client

1. Choose **Settings**, **Manage Hardware Acceleration**.
2. In the **Manage Hardware Acceleration** dialog box, select **Enable Hardware Acceleration for
   Amazon WorkSpaces**, and then choose **Save**.
3. For this change to take effect, choose **Amazon WorkSpaces**, **Quit Amazon WorkSpaces** to
   close the Windows client application.
4. Restart the WorkSpaces Windows client application. Hardware acceleration should now be
   enabled.

   After you've enabled hardware acceleration in the Windows client, if the screen and
   mouse issues described earlier occur, clear the **Enable Hardware Acceleration for Amazon
   WorkSpaces** check box to disable hardware acceleration, and then restart the Windows client
   application.

WorkSpaces administrators can enable hardware acceleration in version 3.1.4 or later of the
WorkSpaces Windows client by using the following commands in a Command Prompt or
PowerShell window.

1. Use the following command to check for the **EnableHwAcc** registry key.

    ```
    reg query "HKCU\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces" /v EnableHwAcc
    ```

2. Use the following command to add the **EnableHwAcc** registry key.

    ```
    reg add "HKCU\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces" /v EnableHwAcc
    ```

    This registry setting takes effect after the WorkSpaces Windows client is closed and restarted.

    If needed, use the following command to delete the **EnableHwAcc** registry key.

    ```
    reg delete "HKCU\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces" /v EnableHwAcc /f
    ```

This registry setting takes effect after the WorkSpaces Windows client is closed and restarted.

To disable hardware acceleration in version 3.1.5 or later of the Windows client

1. Choose **Settings**, **Manage Hardware Acceleration**.
2. In the **Manage Hardware Acceleration** dialog box, unselect **Enable Hardware Acceleration for Amazon WorkSpaces**, and then choose **Save**.
3. For this change to take effect, choose **Amazon WorkSpaces**, **Quit Amazon WorkSpaces** to close the Windows client application.
4. Restart the WorkSpaces Windows client application. Hardware acceleration should now be disabled.

To enable hardware acceleration in version 3.1.4 of the Windows client

1. On your Windows computer (not your WorkSpace), open the Windows search box, and enter **registry editor** to open the Registry Editor (**regedit.exe**). Choose **Run as administrator**. (If you don't have permission to run the Registry Editor as an administrator, contact your system administrator for assistance.)
2. When asked "Do you want to allow this app to make changes to your device?", choose **Yes**.
3. In the Registry Editor, navigate to the following registry entry:

    HKEY_CURRENT_USER\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces

4. Select **Amazon WorkSpaces**, and then choose **Edit** > **New** > **String Value**.

5. For the registry key name, enter **EnableHwAcc**.

6. Close the Registry Editor.

7. Close and restart the WorkSpaces client application.

   After you've enabled hardware acceleration in the Windows client, if the screen and mouse issues described earlier occur, delete the **EnableHwAcc** registry key to disable hardware acceleration, and then restart the Windows client application.

WorkSpaces administrators can enable hardware acceleration in version 3.1.4 or later of the WorkSpaces Windows client by using the following commands in a Command Prompt or PowerShell window.

1. Use the following command to check for the **EnableHwAcc** registry key.

   ```
   reg query "HKCU\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces" /v EnableHwAcc
   ```

2. Use the following command to add the **EnableHwAcc** registry key.

   ```
   reg add "HKCU\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces" /v EnableHwAcc
   ```

   This registry setting takes effect after the WorkSpaces Windows client is closed and restarted.

If needed, use the following command to delete the **EnableHwAcc** registry key.

```
reg delete "HKCU\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces" /v EnableHwAcc /f
```

This registry setting takes effect after the WorkSpaces Windows client is closed and restarted.

To disable hardware acceleration in version 3.1.3 or earlier of the Windows client

If you need to use version 3.1.3 or earlier of the Windows client application, you can disable hardware acceleration in Windows through the Windows registry. Disabling hardware acceleration in Windows might affect the performance of other Windows applications.

1. On your Windows computer (not your WorkSpace), open the Windows search box, and enter **registry editor** to open the Registry Editor (**regedit.exe**). Choose **Run as administrator**. (If you don't have permission to run the Registry Editor as an administrator, contact your system administrator for assistance.)

2.   When asked "Do you want to allow this app to make changes to your device?", choose **Yes**.

3.   In the Registry Editor, navigate to the following registry entry:

       HKEY_CURRENT_USER\SOFTWARE\Microsoft\Avalon.Graphics

4.   Do one of the following:

      - If the **DisableHWAcceleration** registry key exists, select it and choose **Edit** > **Modify**. In
        the **Value data** box, enter **1** (to disable hardware acceleration), and then choose **OK**.

      - If the **DisableHWAcceleration** registry key doesn't exist, do the following:

            a.   Select **Avalon.Graphics**, and then choose **Edit** > **New** > **DWORD (32-bit) Value**.

            b.   For the registry key name, enter **DisableHWAcceleration**.

            c.   Select the new **DisableHWAcceleration** key, and then choose **Edit** > **Modify**.

            d.   In the **Value data** box, enter **1** (to disable hardware acceleration), set **Base** to
                  Hexadecimal, and then choose **OK**.

5.   Close the Registry Editor.

6.   Close and restart the WorkSpaces client application.

> ⓘ **Note**
>
> If you need to enable hardware acceleration to improve the performance of other Windows
> applications, set the **DisableHWAcceleration** key to **0**.

Diagnostic log upload

Enabling diagnostic log uploads

To troubleshoot issues with the WorkSpaces client, you can enable diagnostic logging. The log files
that are sent to WorkSpaces include detailed information about your device and connection to
the AWS network. You can enable diagnostic log uploads before or during WorkSpace streaming
sessions so that these files are sent to WorkSpaces automatically.

To send log files

> ⓘ **Note**
>
> You can send log files before and during WorkSpaces streaming sessions.

1. Open your Amazon WorkSpaces client.

2. At the top of the WorkSpaces sign-in page, choose **Manage Diagnostic Logging Settings**.

3. In the pop-up dialog box, choose **Enable Diagnostic Logging for Amazon WorkSpaces** and click **Save**.

> ⚠️ **Important**
>
> When you report an issue to AWS support, ensure you keep track of the device ID of the client who is experiencing the issue. This device ID can be found in the diagnostics logging menu, in the WorkSpaces client navigation bar, and it helps the support team identify logs associated with your specific device. Ensure you include the device ID in the tickets that you create regarding this specific issue.

Release notes

The following table describes the changes to each release of the Windows client application. As a general security best practice, we recommend that WorkSpaces customers update client software as relevant patches become available to obtain the latest updates. For additional information on all the supported WorkSpaces client versions, see WorkSpaces client application end of life policy.

Release	Date	Changes
5.31.0	January 21, 2026	• Added advanced printing support for DCV-based WorkSpaces using native local printer drivers, enabling features such as two-sided printing, page selection, and layout options.
		• Fixed an issue with the automatic client update functionality that was preventing

Release	Date	Changes
		automatic updates in certain scenarios when VBScript is not present.
		• Added improved error messaging in the case of a SAML session timeout.
		• Other bug fixes and enhancements.
5.30.0	October 21, 2025	• Improved international keyboard experience with new keyboard layout options (server or client) with DCV-based WorkSpaces.
		• Added support for generic USB redirecti on, enabling local USB devices to work with Windows-based Personal WorkSpaces using the DCV protocol.
		• Made an improvement that enables microphone audio streaming only when a remote application is using it, helping to optimize performance.
		• Fixed an issue with the automatic update function which was preventing automatic updates if the client is installed in a custom folder.
		• Fixed an issue that caused the applicati on to crash under certain conditions when streaming with DCV.
		• Updated the DCV SDK.
		• Updated the PCoIP SDK.
		• Updated the .NET Framework.
5.29.2	August 26, 2025	• Bug fixes and enhancements.
5.29.1	August 5, 2025	• Bug fixes and enhancements.

Release	Date	Changes
5.29.0	July 31, 2025	• Added a new automatic client update feature that will automatically check for available updates and install them when you're not using the client, helping you to get the latest features and bug fixes. • Bug fixes and enhancements.
5.28.0	July 1, 2025	• Updated the DCV SDK. • Bug fixes and enhancements.
5.27.1	May 5, 2025	• Bug fixes and enhancements.
5.27.0	April 30, 2025	• Added support for extending full-screen across a selection of available connected monitors for Amazon DCV WorkSpaces. • Updated the DCV SDK. • Updated the PCoIP SDK. • Bug fixes and enhancements.
5.26.2	April 1, 2025	Bug fixes and enhancements.
5.26.1	March 11, 2025	Bug fixes and enhancements.
5.26.0	March 4, 2025	• Added a `Ctrl+Alt+DownArrow` keyboard shortcut to help users navigate from the client application to their local operating system. • Updated the DCV SDK. • Updated the WebView2 SDK. • Updated the .NET SDK. • Bug fixes and enhancements.

Release	Date	Changes
5.25.0	December 19, 2024	• Added a progress bar to help users better understand the expected time during the loading of their WorkSpace. • Updated the DCV SDK. • Bug fixes and enhancements.
5.24.1	November 22, 2024	• Added a notification to warn idle users they will be disconnected from their DCV WorkSpaces due to inactivity. • Improved WorkSpaces client installation process. • Updated the DCV SDK. • Updated WolfSSL for PCoIP SDK. • Updated the RestSharp library. • Bug fixes and enhancements.
5.23.0	September 30, 2024	• Renamed WSP protocol to Amazon DCV protocol. • Added support for file upload and download on DCV WorkSpaces. • Added support for streaming over port 443 for TCP and UDP protocols on DCV WorkSpaces. • Updated the .NET SDK. • Bug fixes and enhancements.
5.22.1	September 3, 2024	Bug fixes and enhancements.
5.22.0	August 16, 2024	• Added support to persist webcam and microphone settings for future sessions on DCV WorkSpaces. • Updated the DCV SDK.

Release	Date	Changes
5.21.0	July 3, 2024	Bug fixes and enhancements.
5.20.0	June 13, 2024	• Updated PCoIP SDK. • Updated DCV SDK. • Migrated the software framework to .NET 8 LTS. • Updated system to require Windows 11 - Version 22000 or later and Windows 10 - Version 1607 or later.
5.19.3	April 30, 2024	• Updated DCV SDK. • Fixed issue where white screens appear in all displays when using multiple monitors with WorkSpaces and clicking full screen. • Fixed issue where users get immediately disconnected from their DCV WorkSpaces when connecting to it. • Fixed issue where the device dialog box isn't showing correct localized language when switching languages.
5.19.0	February 28, 2024	• Updated DCV SDK. • Added WebAuthn support for in-session authentication.
5.18.0	January 22, 2024	Updated DCV SDK.
5.17.0	November 16, 2023	• Fixed USB redirection issue for PCoIP WorkSpaces. • Fixed a client crash when users change running mode. • Fixed a client crash related to printer redirection on DCV client. • Bug fixes and enhancements.

Release	Date	Changes
5.16.0	October 26, 2023	• Added installation guidance. Users on 4.0.6+ version clients with USB redirection enabled need to uninstall old client before upgrading • Added restrictions that only admins have permission to modify custom installation folder • Updated DCV SDK
5.15.1	September 20, 2023	• Added resiliency for network issues for DCV WorkSpaces • Updated DCV SDK • Bug fixes and enhancements
5.13.0	August 29, 2023	• Updated PCoIP SDK and DCV SDK • Resolved an login page special character processing issue • Resolved a crashing issue when closing the Network dialog on the upper right of the client application • Added a link to Amazon WorkSpaces user guide under the Support menu
5.12.1	August 16, 2023	Bug fixes and enhancements
5.12.0	July 11, 2023	Bug fixes and enhancements

Release	Date	Changes
5.11.0	July 3, 2023	- Bug fixes and enhancements - Added **Ctrl**+**Alt**+**Shift**+**F11** as a keyboard shortcut to access the client menu during a streaming session - Fixed the issue where the text was getting cut off on the client login page when the operating system text size was set to 200% - Fixed a bug where the keyboard focus in the dialog box did not cycle through all the device selections when multiple devices were available for redirection. - Incrementally enhanced accessibility to color contrast and names for elements.
5.10.0	June 19, 2023	- Improved client custom branding by storing assets in the same AWS Regions as provisioned WorkSpaces - Resolved black screen issue when using multiple monitors with Ubuntu WorkSpaces - Fixed client diagnostic log uploading issues, where proxy settings were not being persisted when connecting to WorkSpaces through a proxy server - Added support for DCV extension SDK, which allows end users to customize their DCV WorkSpaces experience

Release	Date	Changes
5.9.0	May 9, 2023	• Resolved the issue of displaying the **Keep me logged in** option in the **Manage Login Information** dialog when logging into WorkSpaces with SAML credentials • Resolved the issue of users not being able to log into WorkSpaces when proxy server is enabled • Resolved a keyboard focusing issue when navigating menu items using the Tab key • Updated DCV SDK to fix connectivity issues when using QUIC on DCV WorkSpaces
5.8.0	April 6, 2023	• Fixed a bug that prevented users from logging in under certain scenarios • Fixed a bug to bring certificate selection dialog to the front during smart card logon • Updated DCV v2 SDK to fix minor bugs
5.7.0	February 23, 2023	• Enabled trimming leading or trailing allow list in sign-in credentials • Resolved a crashing issue due to empty registration code • Provided sufficient color contrast, text labels, and instructions in user interface components, such as a login page and a menu bar.
5.6.4	February 1, 2023	• Fixed sign-in credential validation issue • Fixed caps lock flicker issue
5.6.2	January 18, 2023	Bug fixes and enhancements

Release	Date	Changes
5.6.0	December 27, 2022	• Added support for certificate-based authentication via SAML 2.0 integration, which removes the logon prompt for the Active Directory domain password • Resolved an issue of the **Alt** key getting continuously pressed in WorkSpaces • Resolved an issue of the **Num Lock** state that was inverted between WorkSpaces and local machine • Updated PCoIP SDK for the WorkSpaces Windows client • Bug fixes and enhancements
5.5.0	November 14, 2022	• Added a shortcut **Ctrl**+**Alt**+**F12** to disconnect your WorkSpace • Resolved a keystroke-invoking issue when using **Alt** key with mouse clicks
5.4.0	October 5, 2022	Added support for automatic diagnostic log uploads feature that allows you to upload WorkSpaces client log files directly to WorkSpaces to troubleshoot issues without interrupting use of the WorkSpaces client.
5.3.0	September 15, 2022	• Updated DCV SDK for Windows • Resolved an issue of the WorkSpaces clients not being able to save their user names after closing their WorkSpace
5.2.1	August 24, 2022	Fixed the WorkSpaces login page rendering issues on Windows 8.1
5.2.0	August 2, 2022	Updated PCoIP SDK for the WorkSpaces Windows client

Release	Date	Changes
5.1.0	June 30, 2022	Updated DCV SDK for Windows
5.0.0	June 2, 2022	• Updated PCoIP SDK for the WorkSpaces Windows client • Resolved issues when screen sharing WorkSpaces in Microsoft Teams • Bug fixes and enhancements
4.0.6	December 21, 2021	• Enhances PCoIP USB redirection driver. The driver includes important updates and we recommend that all users install it • Resolves failures when using smart cards for authentication for DCV • Resolves crashes and black screen issues related to video streaming for DCV • Updates to DCV version 1.9.8.18175
4.0.5	November 23, 2021	• Optimizes the bandwidth and frame rates for DCV WorkSpaces • Resolves the shortcut mapping issue related to full screen mode • Resolves the issue of the Alt key being pressed automatically

Release	Date	Changes
4.0.4	November 3, 2021	• Resolves the issue of users not being able to switch between Korean and English languages using the Alt key on a physical keyboard • Resolves the mouse scrolling issue that is related to the mouse settings in Windows 10 • Video streaming improvements for WorkSpaces that support DCV • Bug fixes
4.0.3	October 4, 2021	• Resolves crashes due to double-byte user names (for example, Japanese characters) on local machines • Resolves mouse-scrolling issues on 64-bit Windows 8.1 • Bug fixes and enhancements
4.0.2	September 1, 2021	• Minor bug fixes and enhancements ⚠️ **Important** Client version 4.0 supports Windows 8.1 and Windows 10. Attempting to install version 4.0 on Windows 7 or 8 will result in errors. If you are on Windows 7 or Windows 8, update your OS or download the latest 32 bit client (v3.x) from the Amazon WorkSpaces Client Download page.

Release	Date	Changes
4.0.1	July 30, 2021	• Adds USB redirection support for YubiKey U2F authentication on PCoIP Windows WorkSpaces • Minor bug fixes and enhancements
4.0.0	June 30, 2021	The first 64-bit release of the Windows client application
3.1.10	August 5, 2021	Minor bug fixes and enhancements
3.1.9	June 29, 2021	• This release includes fixes to custom login workflows with a URI and is recommended for all users • Bug fixes and enhancements
3.1.8	May 28, 2021	• Fixes the reconnect page redirection after disconnection when **Keep me logged in** is selected • Minor bug fixes and enhancements
3.1.7	April 29, 2021	• Improves connectivity with WorkSpaces using the DCV • Resolves a crash issue related to proxy servers • Minor bug fixes and enhancements
3.1.6	April 8, 2021	Fixes for disconnects and crashes resulting from DCV audio traffic optimization
3.1.5	April 2, 2021	• Adds Settings UI to enable/disable hardware acceleration • Bidirectional video web cam support is now generally available for Windows WorkSpaces using the DCV • Minor bug fixes and enhancements

Release	Date	Changes
3.1.4	March 16, 2021	- Disables hardware acceleration by default to address screen flickering and mouse mispositioning issues observed with certain display driver versions. To manually turn on hardware acceleration, users can restart the WorkSpaces app after creating a registry string value of **EnableHwAcc** under **HKEY_CURRENT_USER\SOFTWARE\Amazon Web Services. LLC\Amazon WorkSpaces**. - Addresses a few crash scenarios when users register, log in, and rebuild - Adds localization support for more UI elements - Minor bug fixes and enhancements
3.1.3	February 15, 2021	- Fixes issue with double Shift key presses not working in some apps - Improves settings UI for proxy configura tions - Minor bug fixes and enhancements
3.1.2	January 8, 2021	- The DCV is now generally available. Video-in functionality continues to be available as a beta feature on DCV WorkSpaces only - Fixes an intermittent issue that impacts client application upgrades - Fixes an issue with the login screen being magnified - Minor bug fixes and enhancements

Release	Date	Changes
3.1.1	December 1, 2020	• Adds support for smart card authentication in the AWS GovCloud (US-West) Region • Minor bug fixes and enhancements ⓘ **Note** Version 3.1.1 is available only in the AWS GovCloud (US-West) Region
3.1.0	December 1, 2020	• Resolves intermittent flickering issue inside of an active WorkSpaces session • Minor bug fixes and enhancements
3.0.12	November 10, 2020	• Adds support for optionally disabling the use of the default proxy server • Adds enhancements to the session reconnect experience • Improves error messaging during session disconnects for DCV WorkSpaces • Fixes keyboard mapping issue with the **Shift** key for DCV WorkSpaces
3.0.11	October 02, 2020	• Resolves an issue with enumeration of video-in devices on DCV WorkSpaces • Resolves an intermittent crash issue when disconnecting from a DCV WorkSpace • Minor bug fixes and enhancements

Release	Date	Changes
3.0.10	September 16, 2020	• Resolves an issue with loading the login screen • Resolves an issue with persisting a user's screen size preference when the user chooses full screen mode and then exits this mode • Resolves an issue that causes the menu bar to be hidden after a user exits full screen mode • Resolves an input method editor (IME) issue • Adds support for health checks over port 4195 (UDP and TCP)
3.0.9	August 14, 2020	Minor bug fixes and enhancements
3.0.8	July 30, 2020	• Adds monochrome cursor support on DCV WorkSpaces • For improved diagnostics, displays round trip time (RTT) as part of the network health check information • Minor bug fixes and enhancements
3.0.7	June 3, 2020	• Adds support for multiple monitors on DCV WorkSpaces • Minor bug fixes and enhancements
3.0.6	April 28, 2020	• Adds support for toggling between high DPI and standard DPI displays • Minor bug fixes and enhancements
3.0.5	March 30, 2020	Resolves an issue with the user interface displaying a login prompt if single sign-on (SSO) is enabled for Amazon WorkDocs

Release	Date	Changes
3.0.4	March 3, 2020	Minor bug fixes and enhancements
3.0.2	February 14, 2020	• Adds keyboard shortcut to toggle full screen display • Adds support for connecting to DCV WorkSpaces • Minor bug fixes and enhancements
3.0.0	November 25, 2019	• Improved user interface • Friendly registration code labels • Minor bug fixes and enhancements
2.5.11	November 4, 2019	Minor bug fixes
2.5.10		• Resolves an intermittent issue related to invalid keystrokes sent when closing a laptop lid • Minor fixes
2.5.9		• Resolves the issue of displaying a blank app icon image on the Windows 10 task bar after WorkSpace client upgrades • Minor bug fixes
2.5.8		Resolves an intermittent crashing issue related to computer waking up when opening a laptop lid
2.5.7		• Adds support for German keyboard layouts with Linux WorkSpaces • Resolves an issue that results in a crash of Excel with clipboard direction
2.5.6		Minor fixes

Release	Date	Changes
2.5.5		Minor fixes
2.5.2		• Resolves an intermittent issue with the Caps Lock key becoming stuck • Minor bug fixes
2.5.1		• Resolves an issue that periodically results in repeated key presses with WorkSpaces running Amazon Linux 2 • Adds support for localized date and time formats in the user interface • Minor user interface improvements
2.5.0		Adds support for user self-service WorkSpace management capabilities
2.4.10		Minor fixes
2.4.9		Minor fixes
2.4.8		• Adds support for uniform resource identifie rs (URIs), which enable login orchestration • Minor fixes
2.4.7		• Resolves an issue with the user interface text not displaying correctly on Microsoft Surface Pro 4 models (Windows only) • Adds support for time zone redirection for more Regions: America/Indianapol is America/Indiana/Marengo America/I ndiana/Vevay America/Indiana/Indianapolis • Includes user interface text changes for the Login page

Release	Date	Changes
2.4.6		• Adds support for configuring the logging level to include advanced logging for debug scenarios • Minor improvements to session provision handling
2.4.5		Adds a check to ensure that certificates issued by Amazon Trust Services are trusted by Windows during installation. By default, an up-to-date Windows local Root CA list includes Starfield Service Root Certificate Authority - G2, and therefore trusts Amazon Trust Services certificates. If the local Root CA list is outdated, the client installer installs the Starfield Service Root Certificate Authority - G2 certificate to the system. If you do not have administrator access to the client device, you'll be prompted to confirm the installation of the Root CA certificate.
2.4.4		• Minor fixes • Improves copy and paste
2.4.2		Minor fixes
2.4.0		• New logo • Improves the user interface and stability
2.3.7		Addresses a gray screen issue that occurs when displays are in different orientations
2.3.6		Localization enhancements
2.3.5		Minor improvements

Release	Date	Changes
2.3.3		• Improves the support for multiple monitors • Localization enhancements • Improves security and performance
2.3.2		Installer fixes
2.3.1		Minor fixes
2.3.0		• Improves support for multiple monitors • Improves security and stability
2.2.3		Resolves minor bugs and improves stability
2.2.1		• Adds support for the German language • Resolves time zone mapping issues for some Regions • Resolves a connection issue on Russian systems • Improves the Japanese user interface • Improves stability
2.1.3		Closing the client expires the reconnect token. You can easily reconnect to your WorkSpace as long as the client is running.
2.1.1		Minor improvement to protocol handling
2.1.0		• Adds support for the following new WorkSpace states: STOPPING and STOPPED • Resolves minor bugs and improves stability

Release	Date	Changes
2.0.8		• Resolves a conflict with running iTunes or Garmin processes during installation • Adds support for a password-free installation experience if installing only for the current user • Resolves an issue with Excel formatting when copying and pasting data in BIFF5 format • If Remember Me is disabled, the user name is not shown on restart • Adds a confirmation dialog box when deleting a registration code • Improves stability
2.0.6		Resolves bugs and includes other improvements
2.0.4		• Adds support for audio in, enabling you to make calls or attend web conferences • Adds support for devices with high DPI screens • Adds support for saving registration codes, enabling you to switch WorkSpaces without re-entering the registration codes • Improves support for Windows 10 • Improves usability and stability

Release	Date	Changes
1.1.80		- Adds CloudWatch metrics for session latency, session launch time, and session disconnects - Improves auto-session resume so that you are interrupted less frequently when network conditions are degraded - Resolves specific issues and improves stability
1.1.6		- Adds support for status notifications. The client application notifies you about the state of your WorkSpace when it cannot connect to the WorkSpace. - Improves the reconnect experience. The client automatically redirects to the login screen after 10 hours of inactivity. You can reconnect again if the client fails to launch a session using reconnect. - Adds support for auto-session resume. The client application automatically attempts to resume your session if network connectivity is lost and then regained within the session-resume timeout (default value is 20 minutes). - Improves network health checks so they are faster and more reliable - Adds client-side validation of registration codes - Improves the synchronization of Caps Lock and Num Lock status between the local device and the WorkSpace

Release	Date	Changes
1.1.4		- Adds support for saving your credentials, enabling you to easily reconnect to your WorkSpace - Improves advanced connection-health checks - Improves stability
1.0.8		- Introduces a full-file installation package - Improves network connectivity checks - Adds version information to the **About** window
1.0		Initial release

Restarting a WorkSpace

If you are experiencing issues with your WorkSpace, you can restart (reboot) it. Restarting a WorkSpace disconnects you from your WorkSpace, so that it can be shut down and restarted. Your user data, operating system, and system settings are not affected. This process takes several minutes to finish.

> ⚠️ **Important**
>
> To avoid losing changes, save any open documents and other application files before you restart your WorkSpace.

To restart your WorkSpace

1. Open your WorkSpaces client and connect to your WorkSpace.
2. Choose **WorkSpaces**, **Restart WorkSpace**.
3. When prompted to restart your WorkSpace, choose **Restart**.
4. After you are disconnected from your WorkSpace, the client application login screen remains open. You can log back in to your WorkSpace, or close the screen.

Rebuilding a WorkSpace

To restore the operating system that is running on your WorkSpace to its original state, you can rebuild the WorkSpace.

If you want to rebuild your WorkSpace to resolve an issue that you are experiencing with the WorkSpace, try restarting it first. If you rebuild your WorkSpace, any applications that you installed and system settings that you configured after the WorkSpace was created are lost.

When a WorkSpace is rebuilt, the D: drive is re-created from the latest backup. Because backups are completed every 12 hours, your data might be up to 12 hours old. If your administrator recently created your WorkSpace, you must wait 12 hours before you can rebuild your WorkSpace.

> ⚠️ **Important**
>
> To avoid losing any data, save any open documents and other application files before you rebuild your WorkSpace, and then contact your WorkSpaces administrator to make sure your D: drive has been backed up.

While your WorkSpace rebuild is in progress, you are disconnected from the WorkSpace. During this time, you can't use or make changes to the WorkSpace. The rebuild process might take up to an hour.

To rebuild your WorkSpace

1. Open your WorkSpaces client and connect to your WorkSpace.
2. Depending on which client you're using, do one of the following.

If you're using...	Do this
3.0+ client	Choose **Settings**, **Rebuild WorkSpace**.
1.0+ or 2.0+ client	Choose **My WorkSpace**, **Rebuild WorkSpace**.

3. In the **Rebuild WorkSpace** dialog box, review the information. If you choose to proceed with the rebuild, choose **Rebuild**.

Increasing WorkSpace disk size

You can increase your WorkSpace disk size to add more storage capacity. You can increase the size of your C: drive (for Linux, this is /) up to 175 GB, and you can increase the size of your D: drive (for Linux, this is /home) up to 100 GB without contacting your administrator. If you need your drives increased beyond these limits, your administrator must increase the sizes of your drives for you.

If your administrator recently created your WorkSpace, you must wait 6 hours before you can increase your WorkSpace disk sizes. After that, you can increase your disk sizes once in a 6-hour period.

You cannot increase the size of the C: and D: drives at the same time. (The same is true of the / and /home volumes in Linux.) To increase the C: drive (or / in Linux), you must first increase the D: drive (or /home in Linux) to 100 GB. After the D: drive (or /home in Linux) has been increased, you can increase the C: drive (or / in Linux).

While your WorkSpace disk size increase is in progress, you can perform most tasks on your WorkSpace. However, you can't change your WorkSpace compute type, switch the WorkSpace running mode, rebuild your WorkSpace, or restart your WorkSpace. The disk size increase process might take up to an hour.

> ⚠️ **Important**
>
> - You can resize only SSD volumes.
> - Increasing your WorkSpace disk size will increase the amount that your organization pays for your WorkSpace.

To increase your WorkSpace disk size

1. Open your WorkSpaces client and connect to your WorkSpace.
2. Depending on which client you're using, do one of the following.

If you're using...	Do this
3.0+ client	Choose **Settings**, **Increase Disk Size**.

If you're using...	Do this
1.0+ or 2.0+ client	Choose **My WorkSpace**, **Increase disk size**.

3. The **Increase disk size** dialog box displays the current disk size of your C: drive and D: drive (or / and /home in Linux). If you proceed with the disk size increase, it also displays the amount by which your storage increases.

4. To proceed with the disk size increase, choose **Increase**.

5. A message displays information about the disk size increase process. Review the information, and choose **Close**.

6. When the disk size increase is finished, you must restart the WorkSpace for the changes to take effect. Save any open files before restarting the WorkSpace.

Changing compute type for WorkSpaces

You can change your WorkSpace compute type to choose a different bundle for your WorkSpace. If your administrator recently created your WorkSpace, you must wait 6 hours before you can change your WorkSpace compute type. After that, you can switch to a larger compute type once in a 6-hour period, or to a smaller compute type once in a 30-day period.

When your WorkSpace compute type change is in progress, you are disconnected from the WorkSpace. During this time, you can't use or make changes to the WorkSpace. This process might take up to an hour.

> ⚠️ **Important**
>
> - To avoid losing changes, save any open documents and other application files before you change your WorkSpace compute type.
> - Changing your WorkSpace compute type will change the amount that your organization pays for your WorkSpace.

To change your WorkSpace compute type

1. Open your WorkSpaces client and connect to your WorkSpace.
2. Depending on which client you're using, do one of the following.

If you're using...	Do this
3.0+ client	Choose **Settings**, **Change Compute Type**.
1.0+ or 2.0+ client	Choose **My WorkSpace**, **Change compute type**.

3. The **Change compute type** dialog box displays the current compute type for your WorkSpace. Choose a different compute type from the list, and then choose **Update**.
4. A message displays information about the compute type change process. Review the information, and choose **Update**.

Switching running mode for a WorkSpace

You can specify whether your WorkSpace is always running or whether it stops after a specified period of inactivity. WorkSpaces provides the following two running modes that you can choose from.

- **AlwaysOn** — Keeps your WorkSpace always running.
- **AutoStop** — Your WorkSpace starts when you sign in and stops after a specified period of inactivity. After your WorkSpace stops, the state of your apps and data is saved.

> ⓘ **Note**
>
> Switching your WorkSpace running mode will change the amount that your organization pays for your WorkSpace.

To switch your WorkSpace running mode for 3.0+ clients

1. Open your WorkSpaces client and connect to your WorkSpace.
2. Choose **Settings**, **Switch Running Mode**.
3. In the **Switch Running Mode** dialog box, choose a different running mode, and then choose **Switch**.
4. A message confirms your choice. Close the message box.

To switch your WorkSpace running mode for 1.0+ and 2.0+ clients

1. Open your WorkSpaces client and connect to your WorkSpace.
2. Choose **My WorkSpace**, **Switch running mode**.
3. In the **Switch running mode** dialog box, choose a different running mode, and then choose **Switch**.
4. A message confirms your choice. Choose **Close**.

Peripheral device support for WorkSpaces client applications

The Amazon WorkSpaces client applications offer the following support for peripheral devices. If you have an issue with using a particular device, have your WorkSpaces administrator send a report to https://console.aws.amazon.com/support/home#/.

Device support might differ depending on which streaming protocol your WorkSpace is using, either PCoIP or DCV. In the 3.0+ versions of the macOS and Windows client applications, you can see which protocol your WorkSpace is using by choosing **Support**, **About My WorkSpace**. The iPad, Android, and Linux client applications currently support only the PCoIP protocol.

Contents

- Monitors
- Keyboards and mice
- Audio headsets
- Printers
- Scanners, USB drives, and other storage devices
- Webcams and other video devices
- Smart cards
- Hardware security keys
- WebAuthn authenticators

Monitors

The WorkSpaces client applications for Linux, macOS, and Windows support multiple monitors and the use of high DPI displays on both DCV and PCoIP WorkSpaces. For more information about display support on these WorkSpaces client applications, including how to set up multiple monitors, see Display Support for the Linux Client, Display Support for the macOS Client, or Display Support for the Windows Client.

The WorkSpaces Android client application supports a single monitor and the use of high DPI displays on PCoIP WorkSpaces. For more information about display support in the WorkSpaces Android client application, see Display Support for the Android Client.

For more information about support for high DPI displays, see [Enabling high DPI display for WorkSpaces](#).

Keyboards and mice

The WorkSpaces client applications for Windows, macOS, and Linux support USB Bluetooth keyboards and mice.

The WorkSpaces client applications for Android and iPad support touch input, and both clients offer on-screen keyboards and support keyboards attached to the device. The Android client supports mice, and [iPads with iPadOS 13.4 or later support Bluetooth mice](#). The iPad client also supports certain SwiftPoint mice models. For more information, see [Swiftpoint GT, ProPoint, or PadPoint mouse](#).

3D mice aren't supported by the WorkSpaces client applications.

To use languages or keyboards other than English, see [Language and keyboard settings for WorkSpaces](#).

Audio headsets

Analog and USB audio headsets are supported on the Android, iPad, macOS, Linux, and Windows client applications, and on the PCoIP Zero Client. We recommend using a headset for audio calls. If you use your device's built-in microphone and speakers, you might experience echoing during your conversations. If you're having difficulty using a headset, see [My headset doesn't work in my WorkSpace](#).

Printers

The Windows and macOS client applications support USB printers and local printing. The other client applications support other printing methods. For details about printer support for the various clients, see [Printing from a WorkSpace](#).

If you're using a PCoIP zero client device to connect to your WorkSpace and you're having trouble using a USB printer or other USB peripheral devices, contact your WorkSpaces administrator for assistance. For more information, see [USB printers and other USB peripherals aren't working for PCoIP zero clients](#) in the *Amazon WorkSpaces Administration Guide*.

Scanners, USB drives, and other storage devices

The WorkSpaces clients do not support scanners or locally attached peripheral storage devices, such as USB flash drives or external hard drives.

If you need to transfer, back up, or synchronize files between your WorkSpace and your local client device, consider emailing the files to yourself. To see if other solutions are available to you, contact your WorkSpaces administrator.

Webcams and other video devices

If your WorkSpace is using the PCoIP protocol, the WorkSpaces clients do not support webcams or other video devices.

If your WorkSpace is using the DCV, versions 3.1.5 and later of the WorkSpaces client applications for Windows and macOS support webcams. For the Windows client, you must run the client on a machine that's running Windows 10 version 1607 or later.

To use a webcam

1. Log in to your DCV WorkSpace.
2. Do one of the following, depending on which client you're using.

If you're using...	Do this
Windows client	To use a webcam on your DCV WorkSpace, select the **Devices** icon in the upper-right corner, and then select **Use this device on the remote WorkSpace**. Choose **Save**. To use a webcam on your local computer instead of on your DCV WorkSpace, select the **Devices** icon

If you're using...	Do this
	in the upper-right corner, and then select **Use Locally**. Choose **Save**.
macOS client	To use a webcam on your DCV WorkSpace , choose **Connections**, **Devices**, and then select **Use this device on the remote WorkSpace**. Choose **Save**. To use a webcam on your local computer instead of on your DCV WorkSpace, choose **Connections**, **Devices**, and then select **Use on local machine**. Choose **Save**.

Smart cards

If your WorkSpace is using the PCoIP protocol, the WorkSpaces clients do not support smart cards.

If your Windows or Linux WorkSpace is using the DCV protocol, version 3.1.1 or later of the WorkSpaces client application for Windows and version 3.1.5 or later of the WorkSpaces client application for macOS support smart cards.

For more information about using smart cards with your WorkSpace, see Smart card authentication for WorkSpaces client.

Hardware security keys

PCoIP Windows WorkSpaces support USB redirection for YubiKey U2F authentication with Windows WorkSpaces client apps. For more information, see USB redirection for WorkSpaces.

To redirect YubiKey to a WorkSpace for U2F authentication

- To use the YubiKey on your PCoIP WorkSpace, select the **Devices** icon

  in the upper-right corner, and then select **Use this device on my remote WorkSpace**. Choose **Save**.

Devices   ✕

Select where you want to use the device. It might take a few minutes to connect your device.

⬩ **YubiKey OTP+FIDO+CCID**

Use on my remote WorkSpace   ⌄

☑ Show Human Interface Devices   Cancel   Save

- To use the YubiKey on your local computer instead of on your WorkSpace, select the

  in the upper-right corner, and then select **Use on my local machine**. Choose **Save**.

Devices   ✕

Select where you want to use the device. It might take a few minutes to connect your device.

⬩ **YubiKey OTP+FIDO+CCID**

Use on my local machine   ⌄

☑ Show Human Interface Devices   Cancel   Save

WebAuthn authenticators

If your WorkSpace is using the PCoIP protocol, WebAuthn redirection isn't supported. However, you can use USB redirection for hardware authenticators, see Hardware security keys WebAuthn redirection is supported for WorkSpaces using DCV protocol. For more information about using smart cards with your WorkSpace, see WebAuthn authentication for WorkSpaces client.

File transfer support in the WorkSpaces client applications

You can upload and download files on local computer and your **My Storage** folder if your WorkSpaces administrator has enabled file transfer.

You can do the following with your **My Storage** folder:

- Open and edit files and folders that you store in your **My Storage** folder.

- Upload and download files between your local computer and your **My Storage** folder.

  > ⓘ **Note**
  >
  > If you're unable to do this, contact your WorkSpaces administrator to enable file transfer within your WorkSpaces session.

- Rename the files or folders in the **My Storage** folder.

> ⓘ **Note**
>
> File transfer is currently supported on personal Windows WorkSpaces when using the Windows or Linux client application, or web access. Contact your administrator if you have questions.

To upload and download files between your local computer and your My Storage folder

1. In the Amazon WorkSpaces client application, in the menu bar, choose **File Transfer**. A **My Storage** window will appear.

2. Navigate to an existing folder or choose **Add Folder** to create a new folder.

3. To upload a file to the folder, choose **Upload File**, select the file that you want to upload, and choose **Open**.

   To download a file from the folder, click on the file that you want to download, or choose the down arrow to the right of the file name and choose **Download**.

Enabling high DPI display for WorkSpaces

The Amazon WorkSpaces Android version 2.4.21 or later client application and the version 3.0+ client applications for Windows, macOS, and Linux support high pixel density (high DPI) displays. Screen resolution is defined by the number of pixels per inch (PPI) or dots per inch (DPI) that the screen can display horizontally and vertically. Some common screen resolutions are:

- 1280x720 – High definition (HD), also known as 720p

- 1920x1080 – FHD (Full HD), also known as 1080p

- 2560x1440 – QHD/WQHD (Quad HD), also known as 1440p

- 3840x2160 – UHD (Ultra HD), also known as 4K 2160p

- 7680×4320 – FUHD (Full Ultra HD), also known as 8K 4320p

> ⓘ **Note**
>
> Although all of these resolutions are labeled "high definition (HD)," that doesn't mean that a monitor with one of these resolutions is a high DPI display.

Contents

Overview

High DPI (also known as HiDPI) displays are those that use twice as many physical pixels to represent images than the virtual pixels that make up an image. For example, if an image is 128 virtual pixels wide and 128 virtual pixels tall, on a high DPI display that image would be rendered using 256 physical pixels in both directions, making the image twice as crisp.

For better maximum resolution of your WorkSpaces on high DPI displays, you can enable high DPI mode in the WorkSpaces client applications for Android, Windows, macOS, and Linux.

Limitations

Enabling high DPI mode might affect the performance of your WorkSpace. To accommodate the bandwidth of your network, the streaming protocol upgrades or downgrades the number of pixels that you receive as needed to maintain performance. However, in high latency, high packet loss, or low bandwidth environments, high DPI mode might affect the performance of your WorkSpace. We recommend that you turn off high DPI mode if it is affecting your WorkSpace performance.

For Windows WorkSpaces, high DPI mode supports multiple monitors. However, the Android client supports only a single monitor.

The maximum display size supported for high DPI mode in the Amazon WorkSpaces client applications is 3840x2160. For more information about display support in the WorkSpaces client applications, see [Display Support for the Android Client](), [Display Support for the Linux Client](), [Display Support for the macOS Client](), or [Display Support for the Windows Client]().

Enabling high DPI mode for Android

To enable high DPI mode for Android

1. Open your Amazon WorkSpaces version 2.4.21 or later client application and log in to your WorkSpace.

2. In the WorkSpaces client application, swipe from the left side of the screen to open the sidebar menu, and then choose **Settings**.

3. In the **Settings** dialog box, select **High DPI Mode**, then choose **OK**.

   The screen resolution of your WorkSpace will change to match the high DPI resolution of your device.

Enabling high DPI mode for Windows, macOS, or Linux

To enable high DPI mode for Windows, macOS, or Linux

1. Open your Amazon WorkSpaces 3.0+ client application and log in to your WorkSpace.

2.   In the WorkSpaces client application, go to **Settings**, **Display Settings**.

3.   In the **Display Settings** dialog box, select **High DPI Mode**, then click **Save**.

     The screen resolution of your WorkSpace will change to match the high DPI resolution of your monitor.

> ⓘ **Note**
>
> If you're using a Mac and your screen resolution in WorkSpaces is low and objects look blurry, do the following:
>
> 1. Open **System Preferences**.
> 2. Choose **Displays**.
> 3. Do one of the following to adjust the display scaling, depending on your display type:
>
> | If you're using... | Do this |
> |---|---|
> | A built-in display | On the **Display** tab, under **Resolution**, choose **Scaled**, and then choose **Default**. |
> | An external display | On the **Display** tab, choose **Default for display**. |

If the images and text in your WorkSpace are smaller than you prefer, you will also need to adjust the display scale settings on your Windows or Linux WorkSpace.

> ⚠ **Important**
>
> - **Be sure to adjust the display scale settings within the WorkSpace itself, not the display scale settings for the local Windows, Linux, or Mac machine that you are using to access the WorkSpace.**
>
> - When you dock or undock a laptop, or switch to another client device, you might need to readjust the scaling settings in the WorkSpace to suit the new monitor.

Adjusting the scaling settings on a Windows WorkSpace

To adjust the scaling settings on a Windows WorkSpace

1. In your Windows WorkSpace, go to the Windows **Start** menu and choose **Settings**.

2. In the **Windows Settings** dialog box, choose **System**.

3. Choose **Display**.

    > ⓘ **Note**
    >
    > If you see the message "The display settings cannot be changed from a remote
    > session," this means that you're using a DCV WorkSpace. At this time, you can't adjust
    > the display scale settings for a DCV WorkSpace.

4. Under **Change the size of text, apps, and other items**, set the amount of scaling you prefer.

5. A message appears that says "Some apps won't respond to scaling changes until you sign
    out." To sign out, you can choose **Sign out now** below that message. Note that signing out
    disconnects your WorkSpace session, so save your work before signing out.

6. To restart your WorkSpace session, either choose **Reconnect** on the WorkSpaces client login
    page, or log in again.

7. If you are using multiple monitors, repeat these steps to set the scaling settings for each
    monitor.

Adjusting the scaling settings on a Linux WorkSpace

To adjust the scaling settings on a Linux WorkSpace

> ⓘ **Note**
>
> - These steps assume that you're using the default MATE environment for Amazon Linux
>   WorkSpaces.
>
> - For Linux WorkSpaces, high DPI mode isn't available for multiple monitors at this time.

1. In your Linux WorkSpace, go to **System** > **Preferences** > **Appearance**.

2. In the **Appearance Preferences** dialog box, choose the **Fonts** tab.

3. Choose **Details** in the lower-right corner.

4. In the **Font Rendering Details** dialog box, under **Resolution**, you will see a **Dots per inch (DPI)** setting. To manually adjust this setting, turn off **Automatic detection**.

5. Adjust the font size by using the **Dots per inch (DPI)** setting.

6. Close the dialog box.

Authentication for WorkSpaces

You can use two authentication methods for your Amazon WorkSpaces, including using smart card authentication and WebAuthn.

Contents

- [Smart card authentication for WorkSpaces client](#)
- [WebAuthn authentication for WorkSpaces client](#)
- [Configure WebAuthn on Windows WorkSpaces](#)
- [Configure WebAuthn on Linux WorkSpaces](#)

Smart card authentication for WorkSpaces client

Smart cards are supported using the DCV for Windows and Linux WorkSpaces, on Windows, macOS, and Ubuntu 22.04 or later clients. WorkSpaces using the PCoIP protocol do not support smart cards.

You can use smart cards for both *pre-session authentication* and *in-session authentication*. Authentication is the process of verifying your identity and confirming that you have access to certain resources. Pre-session authentication refers to smart card authentication that's performed while you're logging in to your WorkSpace. In-session authentication refers to authentication that's performed during your WorkSpace session, after you log in.

For example, you can use smart cards for in-session authentication while working with web browsers and applications. You can also use smart cards for performing actions that require administrative permissions. For example, if you have administrative permissions on your Linux WorkSpace, you can use smart cards to authenticate yourself when running `sudo` and `sudo -i` commands.

> ℹ️ **Note**
>
> - Both [Common Access Card (CAC)](#) and [Personal Identity Verification Card 101](#) smart cards are supported. Other types of hardware or software-based smart cards might also work, but they haven't been fully tested for use with the DCV protocol.

- For in-session authentication and pre-session authentication on Linux or Windows WorkSpaces, only one smart card is currently allowed at a time. Simultaneous use of multiple cards may work, but is not supported.

- In-session authentication is available in all Regions where DCV is supported. Pre-session authentication is available in the following Regions:

  - Asia Pacific (Sydney) Region

  - Asia Pacific (Tokyo) Region

  - Europe (Ireland) Region

  - AWS GovCloud (US-East) Region

  - AWS GovCloud (US-West) Region

  - US East (N. Virginia) Region

  - US West (Oregon) Region

- Only the WorkSpaces Windows client application version 3.1.1 or later, the macOS client application version 3.1.5 or later, and Ubuntu 22.04 (or later) client application version 2024.1 or later are currently supported for smart card authentication. The WorkSpaces Ubuntu 20.04 client application is not supported for smart card authentication.

- The WorkSpaces Windows client application 3.1.1 or later supports smart cards only when the client is running on a 64-bit version of Windows.

Contents

- [Use a smart card to log in to your WorkSpace](#)

- [Use a smart card with Chrome or Firefox on Windows WorkSpaces (in-session)](#)

- [Use a smart card with Chrome or Firefox on Linux WorkSpaces (in-session)](#)

Use a smart card to log in to your WorkSpace

To use your smart card to log in to your WorkSpace

1. Enter the registration code provided by your WorkSpaces administrator, and then choose **Register**. You might need to choose **Change Registration Code** at the bottom of the login page so that you can enter a new registration code.

After you've entered your registration code, **Insert your smart card** appears on the login page. If you don't see this text, verify that you've entered the correct registration code. If you've entered the correct registration code and you don't see this text, contact your WorkSpaces administrator for help.

> ⓘ **Note**
>
> On some versions of WorkSpaces client application you may have to choose **Sign in** before you see **Insert your smart card**.

2. If you haven't done so already, plug your smart card reader into your local machine, and then insert your smart card into your smart card reader.

3. On the login page, choose **Insert your smart card**.

4. The **Certificates** dialog box appears. Select your certificate, and then choose **OK**.

5. The **Smart Card** dialog box appears. Enter your PIN, and then choose **OK**.

6. On the Windows desktop login page, choose **Sign-in options**, then choose the smart card icon. If you have multiple smart cards, choose the one you want to use. Enter your PIN again, then choose **Submit**.

    On the Linux login page, enter your PIN and choose **Sign In**.

> ⓘ **Note**
>
> You may have to dismiss a lock screen before you see PIN prompt.

You should be logged in to your WorkSpace. If you're unable to sign in, close and reopen the WorkSpaces client application, and then try again. After trying again, if you still aren't able to sign in, contact your WorkSpaces administrator for help.

After you have logged in to your WorkSpace, you can continue to use the smart card on your local device as well as in the WorkSpace.

Use a smart card with Chrome or Firefox on Windows WorkSpaces (in-session)

You can use a smart card within a Windows WorkSpace, on Chrome or Firefox, to authenticate other applications.

Chrome doesn't require any special configuration to work with your smart card.

You WorkSpaces administrator may have already enabled Firefox to work with smart cards. If you want to use a smart card on Firefox but it doesn't work, contact your WorkSpaces administrator.

Use a smart card with Chrome or Firefox on Linux WorkSpaces (in-session)

You can use a smart card within a Linux WorkSpace, on Chrome or Firefox, to authenticate other applications.

To use your smart card with the Chrome browser

1. Log in to your Linux WorkSpace using the WorkSpaces client application.
2. Open terminal application (e.g., **GNOME Terminal** on Ubuntu, Rocky Linux, or Red Hat Enterprise Linux WorkSpaces, or **MATE Terminal** on AL2 WorkSpaces).
3. Run the following command:

   ```
   cd; modutil -dbdir sql:.pki/nssdb/ -add "OpenSC" -libfile PATH/opensc-pkcs11.so
   ```

   where *PATH* is `/usr/lib64` on RPM-based system like Rocky Linux, Red Hat Enterprise Linux, and AL2, and `/usr/lib/x86_64-linux-gnu` on Debian-based systems (Ubuntu WorkSpaces)

4. If Chrome is already running, close it, and then press **Enter**. When the command finishes running, you should see this message:

   ```
   Module "OpenSC" added to database.
   ```

To use your smart card with the Firefox browser

Your WorkSpaces administrator might have already enabled Firefox to work with smart cards. If your smart card doesn't work in Firefox, use the following procedure to enable it.

1. Open Firefox. Choose the menu button

   ≡

   in the upper-right corner, and then choose **Preferences**.

2. On the **about:preferences** page, in the left navigation pane, choose **Privacy & Security**.

3. Under **Certificates**, choose **Security Devices**.

4. In the **Device Manager** dialog box, choose **Load**.

5. In the **Load PKCS#11 Device Driver** dialog box, enter the following:

   Module Name: **OpenSC**

   Module filename: *PATH*/opensc-pkcs11.so

   where *PATH* is /usr/lib64 on RPM-based system like Rocky Linux, Red Hat Enterprise Linux, and AL2, and /usr/lib/x86_64-linux-gnu on Debian-based systems (Ubuntu WorkSpaces)

6. Choose **OK**.

WebAuthn authentication for WorkSpaces client

In-session WebAuthn authentication is supported using the DCV for Windows and Linux WorkSpaces, on Windows, Linux and macOS clients. WorkSpaces using the PCoIP protocol doesn't support WebAuthn redirection.

You can use WebAuthn authentication for in-session authentication using FIDO2-enabled authentication methods like security keys or biometrics. In-session authentication refers to WebAuthn authentication that's performed after logging in and requested by web applications running within the session. For example, you can use Yubikey for in-session authentication while using Google Chrome.

Client version requirements

The following WorkSpaces client versions support WebAuthn:

WebAuthn Type	Client versions supported
Standard WebAuthn	• Windows client 5.19.0 or above • Mac client 5.19.0 or above

WebAuthn Type	Client versions supported
	• Linux client 2024.0 or above
Enhanced WebAuthn	• Windows client 5.29.0 or above • Mac client 5.29.0 or above

Get Started

-
-

Configure WebAuthn on Windows WorkSpaces

Windows WorkSpaces support two WebAuthn modes: Enhanced and Standard.

Standard WebAuthn

Standard WebAuthn requires a browser extension to facilitate the redirection of WebAuthn prompts onto the client. This version of WebAuthn is supported on WorkSpaces client apps on Windows, Mac and Linux.

Enabling Standard WebAuthn

Your WorkSpaces administrator can enable and disable WebAuthn. Your browser will notify you that the required browser extension is installed for you when your administrator enables it.

To install the browser extension manually (optional)

1. Sign into your WorkSpace.

2. In your browser, open one of the following links, depending on the browser you're using:

   - For **Microsoft Edge**: https://microsoftedge.microsoft.com/addons/detail/dcv-webauthn-redirection-/ihejeaahjpbegmaaegiikmlphghlfmeh

   - For **Google Chrome**: https://chromewebstore.google.com/detail/dcv-webauthn-redirection/mmiioagbgnbojdbcjoddlefhmcocfpmn?pli=1

3. Install the extension by choosing:

- **Get** (for Microsoft Edge)

- **Add to Chrome** (for Google Chrome).

   Then choose **Add extension**.

   Once the installation is complete, you'll see a confirmation message saying that you've successfully added the extension.

Enhanced WebAuthn

Enhanced WebAuthn does not require a browser extension, which simplifies the initial setup, and provides improved performance. It also introduces support for WebAuthn on native Windows applications, enabling you to use WebAuthn authentication in both web browsers and Windows desktop applications.

Key Benefits

Enhanced WebAuthn provides the following key benefits:

- No browser extension required

- Improved performance

- Support for WebAuthn in native Windows applications

- Seamless authentication experience across browsers and desktop applications

Enabling Enhanced WebAuthn

- Ensure your WorkSpace is running the latest version of the Amazon DCV host agent (version 2.1.0.2000 or above) for Windows.

- Ensure your WorkSpaces client supports WebAuthn. For more information, see Client version requirements.

- Contact your WorkSpaces administrator to enable WebAuthn for your WorkSpace.

> ⓘ **Note**
>
> If you're upgrading from Standard WebAuthn to Enhanced WebAuthn, disable or uninstall the browser extension you previously installed for Standard WebAuthn.

Using Enhanced WebAuthn

Once enabled, Enhanced WebAuthn works seamlessly on apps allowed by your administrator, without any additional configuration on your part. You can use your WebAuthn devices for authentication in:

- Web browsers (Chrome, Edge)
- Native Windows applications that support WebAuthn
- Windows system dialogs requiring WebAuthn authentication

Troubleshooting

If you encounter any issues with Standard WebAuthn or Enhanced WebAuthn:

- Ensure your WorkSpaces host agent and WorkSpaces client are up to date.
- For Standard WebAuthn, verify that the browser extension is installed and enabled.
- For Enhanced WebAuthn, confirm with your administrator that it's enabled for your WorkSpace.
- Try restarting your browser or your WorkSpace session.
- If problems persist, contact your WorkSpaces administrator or AWS Support.

Configure WebAuthn on Linux WorkSpaces

Linux WorkSpaces currently support Standard WebAuthn, which requires a browser extension to facilitate the redirection of WebAuthn prompts onto the client.

Prerequisites

- Amazon WorkSpaces WSP host adapter version 2.1.0.1923 or higher
- Amazon WorkSpaces native clients for Windows, Linux and Mac that support WebAuthn.

For more information, see [Client version requirements](#).

- Root access (sudo) on the Linux WorkSpaces instance

- Internet access to download browser extensions

Configuration Steps

1. Verify WSP Host Adapter Version

- Use the following command to verify the version of WSP host adapter. If version is lower than
  2.1.0.1923, reboot the WorkSpace, and the adapter will be updated automatically.

```
$ apt show wsp-dcv-host-adapter
```

2. Configure Native Messaging Host

- For each supported browser, create a symbolic link to the native messaging host manifest file:

Google Chrome

```
$ sudo mkdir -p /etc/opt/chrome/native-messaging-hosts
sudo ln -s -f /usr/share/dcv/webauthn/
com.dcv.webauthnredirection.nativemessagehost.json /etc/opt/chrome/native-
messaging-hosts/
```

Chromium

```
$ sudo mkdir -p /etc/chromium/native-messaging-hosts
sudo ln -s -f /usr/share/dcv/webauthn/
com.dcv.webauthnredirection.nativemessagehost.json /etc/chromium/native-messaging-
hosts/
```

Microsoft Edge

```
$ sudo mkdir -p /etc/opt/edge/native-messaging-hosts
sudo ln -s -f /usr/share/dcv/webauthn/
com.dcv.webauthnredirection.nativemessagehost.json /etc/opt/edge/native-messaging-
hosts/
```

3. Install the DCV WebAuthn Extension

1. Install the browser extension for WebAuthn redirection. This can be done manually or through enterprise policies.

   Installing Manually

   Download the extension from the respective browser stores:

   - [Microsoft Edge Add-ons](#)

   - [Chrome Web Store](#)

   For manual installation:

   a. Connect to your Amazon DCV session.

   b. Open your preferred browser, and navigate to the relevant browser store (links above).

   c. Proceed by selecting **Get** (Microsoft Edge) or **Add to Chrome** (Google Chrome).

   d. Follow the on-screen instructions. A confirmation will appear once the extension is successfully added.

2. To enable seamless setup, you can configure the system to preinstall the DCV WebAuthn extension as follows:

   Google Chrome

   ```
   $ sudo mkdir -p /usr/share/google-chrome/extensions/
   echo '{"external_update_url": "https://clients2.google.com/service/update2/crx"}' |
    \
   sudo tee /usr/share/google-chrome/extensions/mmiioagbgnbojdbcjoddlefhmcocfpmn.json
   sudo chmod a+r /usr/share/google-chrome/extensions/
   mmiioagbgnbojdbcjoddlefhmcocfpmn.json
   ```

   Chromium, Brave browser

   ```
   $ sudo mkdir -p /usr/share/chromium/extensions/
   echo '{"external_update_url": "https://clients2.google.com/service/update2/crx"}' |
    \
   sudo tee /usr/share/chromium/extensions/mmiioagbgnbojdbcjoddlefhmcocfpmn.json
   sudo chmod a+r /usr/share/chromium/extensions/mmiioagbgnbojdbcjoddlefhmcocfpmn.json
   ```

Microsoft Edge

```
$ sudo mkdir -p /usr/share/microsoft-edge/extensions/
echo '{"external_update_url": "https://edge.microsoft.com/extensionwebstorebase/v1/
crx"}' | \
sudo tee /usr/share/microsoft-edge/extensions/ihejeaahjpbegmaaegiikmlphghlfmeh.json
sudo chmod a+r /usr/share/microsoft-edge/extensions/
ihejeaahjpbegmaaegiikmlphghlfmeh.json
```

4. Restart the browser.

During the restart, the DCV WebAuthn extension should install automatically, and WebAuthn devices will be available for redirection in your WorkSpaces session. If you encounter any issues, please contact AWS Support or refer to your WorkSpaces documentation for further troubleshooting.

Amazon Connect audio optimization for WorkSpaces

Amazon WorkSpaces allows you to add Amazon Connect Contact Control Panel (CCP) to your WorkSpace so you can use Amazon Connect audio optimization.

To use Amazon Connect audio optimization with your WorkSpace:

- You must have the WorkSpaces Windows client version 4.0.6 or later installed.
- You must have a web browser installed onto the WorkSpaces client endpoint that's supported by Amazon Connect. For the list of supported browsers, see Browsers supported by Amazon Connect.

> ⓘ **Note**
>
> If you do not have a supported web browser, you will be asked to install a supported browser.

- You must have an existing Amazon Connect account.

Log in to your WorkSpace and Amazon Connect Contact Control Panel (CCP)

Log in to your WorkSpace and Amazon Connect Contact Control Panel (CCP)

After your administrator has enabled Amazon Connect Contact Control Panel (CCP) audio optimization, log in to your WorkSpace and the CCP Panel.

1. Open the WorkSpaces client and log in to your WorkSpace.
2. A web browser will open locally, displaying your CCP login page.
3. Log in to your CCP in the local browser window. When you have logged in, CCP audio optimization is enabled.
4. Switch back to your WorkSpaces window, but keep the local browser window running in the background.

> ⚠️ **Warning**
>
> - If you close the local browser window that you used to log in to CCP, you will lose your CCP audio (though your WorkSpaces client will continue running).
>
> - If you close your WorkSpaces window, your local browser window will also close, and your CCP audio will stop.

If you accidentally close your local browser CCP window or if it crashes, you can restart it. Go to the menu bar, select **Add-in**, and then select the administrator-given CCP name.

For more information about using Amazon Connect, go to the [Agent training guide](#).

Language and keyboard settings for WorkSpaces

To use the same language and keyboard settings on your client device and your WorkSpace, use one of the following methods, depending on which protocol your WorkSpace is using: PCoIP or DCV.

> **ⓘ Note**
>
> The following procedures might require you to sign out of Windows or disconnect from your WorkSpace. Be sure to save your work before proceeding.

WorkSpaces using the PCoIP protocol

If you're using a language-specific keyboard, use one of the following methods to make your keyboard and your WorkSpace language settings match.

- **Method 1** — Change the keyboard and language settings on your device so that they match the language of your WorkSpace.

- **Method 2** — If you are in an AWS Region that supports more than one language, have your WorkSpaces administrator create a WorkSpace for you in your preferred language. Windows WorkSpaces are currently available in all Regions in English (US).

  In certain Regions, other languages are available. In the Canada (Central) Region, Windows WorkSpaces are also available in French (Canadian); in the Asia Pacific (Seoul) Region, Korean is also available; in the Asia Pacific (Tokyo) Region, Japanese is also available; and in the China (Ningxia) Region, Chinese (Simplified) is also available.

  To see which Region your WorkSpace is in, log in to the WorkSpaces client application, and then choose **Support**, **About My WorkSpace**.

- **Method 3** — Install the appropriate language or keyboard settings on your WorkSpace. For a Windows WorkSpace, use the following steps:

  1. Log in to the WorkSpace.

  2. On the Windows **Start** menu, choose **Settings**.

  3. Choose **Time & Language**, and then choose **Language**.

  4. Under **Preferred languages**, choose **Add a language**.

5. In the **Choose a language to install** dialog box, select the language to add, and then choose **Next**.

6. In the **Install language features** dialog box, select the language features that you want, and then choose **Install**. For example, if you only want to add support for a language-specific keyboard, select **Basic typing** to install keyboard support for that language.

7. (Optional) If you've chosen a new display language, sign out of Windows and then sign back in to see the changes take effect.

8. If you didn't change the display language, select the new keyboard layout for the language that you installed. To do so, in the Windows taskbar, choose **ENG** in the lower-right corner next to the date and time. A menu appears. Select the language keyboard that you want to use for input.

WorkSpaces using the DCV protocol

When connecting to WorkSpaces using the WorkSpaces Streaming Protocol (WSP), you can select the keyboard mode that matches your preferred typing experience.

Client keyboard layout

- In this mode, typing will follow your local keyboard layout. This means that you can type keys and key combinations using your local keyboard layout, and these will be sent to the remote WorkSpace, regardless of the WorkSpace server layout or language. Note that your typing will not necessarily match 1:1 for each key, but the final result will be the same UTF-8 character.

- This is the default mode.

Server keyboard layout

- In this mode, typing will follow the remote WorkSpace's keyboard layout. This means that you can type as if you were typing on the keyboard layout of the WorkSpace. This mode is useful in cases when you want the keys to match 1:1 across the client and WorkSpace, when you want to type in keys or key combinations that are not available in your local client keyboard layout, or when you don't want to change, or are unable to change, your local client keyboard layout setting.

> ⓘ **Note**
>
> This mode is supported only when connecting from the Amazon WorkSpaces clients on
> Windows and macOS, when connecting to a Windows-based remote WorkSpace.

- To select the **Server keyboard layout** mode, enable the **Configure server keyboard layout
  usage** GPO (see *Amazon WorkSpaces Administration Guide* for more details). Then, if you are
  using a language-specific keyboard you can follow the same instructions for provided for
  [WorkSpaces using the PCoIP protocol](#).

Client keyboard layout and IME languages

The following languages require the use of an Input Method Editor (IME) to enter characters that
aren't found on a QWERTY keyboard:

- Amharic (Ethiopia)
- Chinese (PRC)
- Chinese (Traditional)
- Chinese (Traditional DaYi input method)
- Chinese (Wubi input method)
- Chinese (Yi script)
- Japanese (Japan)
- Japanese (106/109 keyboard layout)
- Korean (Hangul)
- Korean (Old Hangul)
- Tigrinya (Ethiopia)

If you want to use a specific keyboard language layout while using WorkSpaces Streaming Protocol
(WSP), you can follow one of the following instructions based on whether you're using an IME
language or a non-IME language.

> ⓘ **Note**
>
> If you want to use the Japanese 106/109 keyboard layout, be sure to use the procedure specific to the Japanese 106/109 layout.

To use a non-IME language

If you're using a non-IME language (for example, French), use the following procedure.

1. Set the local client device to the language-specific keyboard that you want.

   a. On the Windows **Start** menu, choose **Settings**.

   b. Choose **Time & language**.

   c. Choose **Language**.

   d. Under **Preferred languages**, select **Add a language**.

   e. On the **Choose a language to install** page, select the language you want.

   f. Choose **Next**.

   g. Choose **Install**.

   h. If needed, set your language-specific keyboard layout by selecting the language and then choosing **Options**.

   i. (Optional) If you chose a new display language, sign out of Windows so that the new display language can take effect.

2. Select the new keyboard layout for the language that you installed. To do so, in the Windows taskbar, choose **ENG** in the lower-right corner next to the date and time. A menu appears. Select the language keyboard that you want to use for input.

To change the display language in your WorkSpaces desktop client application, see Client Language (Linux), Client Language (macOS), or Client Language (Windows).

To use an IME language other than Japanese 106/109

If you're using an IME language other than the Japanese 106/109 keyboard layout (for example, Korean), use the following procedure.

1. Set the local client device's keyboard layout to the IME language that you want.

a. On the Windows **Start** menu, choose **Settings**.

b. Choose **Time & language**.

c. Choose **Language**.

d. Under **Preferred languages**, select **Add a language**.

e. On the **Choose a language to install** page, select the language that you want.

f. Choose **Next**.

g. Choose **Install**.

h. If needed, set your language-specific keyboard layout by selecting the language and then choosing **Options**.

i. (Optional) If you chose a new display language, sign out of Windows so that the new display language can take effect.

2. Select the new keyboard layout for the language that you installed. To do so, in the Windows taskbar, choose **ENG** in the lower-right corner next to the date and time. A menu appears. Select the language keyboard that you want to use for input.

3. Start your WorkSpaces client application and log into your WSP WorkSpace.

4. Inside the WorkSpace, set the input language to the IME language that you want.

a. On the Windows **Start** menu, choose **Settings**.

b. Choose **Time & language**.

c. Choose **Region & language**.

d. Under **Languages**, select **Add a language**.

e. On the **Add a language** page, select the IME language that you want.

f. (Optional) If needed, set your language-specific keyboard layout by selecting the language on the **Language** page and then choosing **Options**.

g. (Optional) If you chose a new display language, sign out of Windows so that the new display language can take effect. When you sign out, you're also disconnected from your WorkSpace.

5. Disconnect from your WorkSpace (if you didn't already do so in the previous step).

6. Reconnect to your WorkSpace.

7. Inside the WorkSpace, in the Windows taskbar, choose **ENG** in the lower-right corner next to the date and time. A menu appears. Select the IME language that you installed.

You can now use your IME language in your WSP WorkSpace.

To change the display language in your WorkSpaces desktop client application, see Client Language (Linux), Client Language (macOS), or Client Language (Windows).

To use the Japanese 106/109 keyboard layout

If you're using the Japanese 106/109 keyboard layout, use the following procedure.

1. Set the local client device's display language to Japanese, and set the keyboard to use the Japanese 106/109 keyboard layout.

    a. On the Windows **Start** menu, choose **Settings**.

    b. Choose **Time & language**.

    c. Choose **Language**.

    d. Under **Preferred languages**, select **Add a language**.

    e. On the **Choose a language to install** page, select **Japanese**.

    f. Choose **Next**.

    g. On the **Install language features** page, choose **Install**.

    h. On the **Languages** page, select **Japanese**, and then choose **Options**.

    i. In the **Language options: Japanese** page, under **Hardware keyboard layout**, choose **Change layout**.

    j. In the **Change hardware keyboard layout** dialog box, select **Japanese keyboard (106/109 key)**.

    k. The change doesn't take effect until you restart Windows. Either choose **Restart now**, or choose **OK**, save your work, and then restart Windows.

2. Select the new keyboard layout that you installed. To do so, in the Windows taskbar, choose **ENG** in the lower-right corner next to the date and time. A menu appears. Select **Japanese Microsoft IME**.

3. Start your WorkSpaces client application and log into your WSP WorkSpace.

4. Inside the WorkSpace, set Japanese as the default display language and set the keyboard layout to Japanese 106/109.

    a. On the Windows **Start** menu, choose **Settings**.

    b. Choose **Time & language**.

    c. Choose **Region & language**.

    d.   Under **Languages**, select **Add a language**.

    e.   On the **Add a language** page, select **Japanese**.

    f.   On the **Languages** page, select **Japanese**, and then choose **Set as default**.

    g.   On the **Languages** page, select **Japanese**, and then choose **Options**.

    h.   In the **Language options** page, under **Hardware keyboard layout**, choose **Change layout**.

    i.   In the **Change hardware keyboard layout** dialog box, select **Japanese keyboard (106/109 key)**.

    j.   The change doesn't take effect until you sign out of Windows. Choose **Sign out**.

        You will be signed out of Windows and disconnected from your WorkSpace.

5.   Reconnect to your WorkSpace.

6.   Inside the WorkSpace, in the Windows taskbar, choose **ENG** in the lower-right corner next to the date and time. A menu appears. Select **Japanese Microsoft IME**.

You can now use the Japanese 106/109 keyboard layout in your WSP WorkSpace.

To change the display language in your WorkSpaces desktop client application, see Client Language (Linux), Client Language (macOS), or Client Language (Windows).

USB redirection for WorkSpaces

Universal Serial Bus (USB) redirection enables access to local USB devices within your virtual desktop environment. USB redirection is supported on both PCoIP and DCV-based WorkSpaces. The implementation varies depending on the protocol used by your WorkSpace.

Contents

- USB redirection for PCoIP WorkSpaces
- USB redirection for DCV WorkSpaces

USB redirection for PCoIP WorkSpaces

USB is used to connect computers to devices, such as scanners, printers, external drives, and security keys. USB redirection enables access to local USB devices within your virtual desktop environment.

PCoIP Windows WorkSpaces support redirection of a locally attached YubiKey for universal 2nd factor authentication from the Windows WorkSpaces client application.

> **ⓘ Note**
>
> YubiKey redirection is only supported for Windows WorkSpaces clients.

Requirements

- USB redirection is disabled by default on Windows PCoIP WorkSpaces. You must enable USB redirection for WorkSpaces. You can configure USB device rules to define which devices can be redirected. For more information, see Manage your Windows WorkSpaces
- Install WorkSpaces client version 4.0 or later, with the USB redirection driver, locally. For more information, see Setup and installation.

Supported USB devices

The following is a list of USB YubiKey models that are validated to work with the PCoIP Windows WorkSpaces redirection for U2F:

- YubiKey 4

- YubiKey 5 NFC

- YubiKey 5 Nano

- YubiKey 5C

- YubiKey 5C Nano

- YubiKey 5 NFC

- Most USB type C to USB type A adapters can be used with a supported YubiKey

Unsupported USB devices

Most USB mass storage devices and some scanners and printers use data transfer types, including control, interrupt, and bulk. Devices using these data transfer types are not supported but they may be redirected in your WorkSpaces. Isochronous transfers, which are commonly used in webcams, are not supported. Therefore, USB webcams are not supported.

The following USB device is validated to work with PCoIP WorkSpaces for U2F authentication, although it is not supported:

- Thetis Security Key

The following USB device doesn't work with PCoIP WorkSpaces for U2F authentication:

- Kensington Security Key

Connecting your USB device to your WorkSpace

To connect your local USB device to your WorkSpace

> ⚠️ **Warning**
>
> When you connect a local USB device to your WorkSpace, it is no longer available for use by your local computer. For example, if you redirect your USB mouse to the WorkSpace, your computer cannot receive mouse input from the redirected USB mouse until you disconnect it from the WorkSpace.

USB device connections do not persist across WorkSpaces streaming sessions. You must connect your USB device each time that you connect to your WorkSpace. Up to 10 USB devices can be redirected concurrently in a WorkSpaces streaming session.

1. Log in to a PCoIP Windows WorkSpace using the WorkSpaces Windows client application.

2. On the client interface, click the **Devices** icon to list the locally attached USB devices.

3. Select the USB device and choose **Use with WorkSpaces** from the menu next to the device name.

4. Your USB device is ready to use with your WorkSpace.

Disconnecting your USB device from your WorkSpace

To disconnect your local USB device from your WorkSpace

1. On the client interface, click the icon to list the locally attached USB devices.

2. Select the USB device and choose **Use with local device** from the menu next to the device name.

3. Your USB device is ready to use with your local computer.

Reinstalling or upgrading your USB redirection drivers

To reinstall or upgrade USB redirection drivers

Follow these steps to do a clean re-installation or upgrade of the drivers.

1. Uninstall the USB redirection drivers by running the following command.

   ```
   [Amazon WorkSpaces directory]\pcoipusb\bin\USB\PCoIP_Client_USB_uninstaller.exe
   ```

2. Reboot your machine.

3. Open the **Registry Editor** editor.

4. Under **HKLM**, search for **fusbhub**.

5. Remove the registry key, which is the item in the left pane with the folder icon. In this case it is the **fuhub** key, containing **fusbhub**. If you cannot remove this registry key, make note of the .inf file name that's associated with the registry entry. The .inf file name usually starts with

"oem," for example "oem9.inf". Open the command line (using administrator privileges), and run the following prompt, substituting the .inf file name for *oem9.inf*.

```
pnputil -f -d oem9.inf
```

6. Repeat step 5 until **fusbhub** is completely removed from the registry editor.

7. Reboot your machine.

8. For upgrades only, you must download the latest client and install it. You can choose to install USB drivers during the client installation.

9. After you log into your WorkSpace, select the **Devices** icon

and reinstall the USB driver. Alternatively, you can invoke the following PowerShell script (using administrator privileges).

```
[Amazon WorkSpaces directory]\pcoipusb\install-pcoip-usb-driver.ps1
```

USB redirection for DCV WorkSpaces

Starting with WorkSpaces Windows client version 5.30.0, Amazon WorkSpaces supports generic USB redirection for the WorkSpaces app on Windows. This allows you to access local USB devices within your virtual desktop environment. This feature complements existing optimized redirection solutions for specific device classes such as printers and WebAuthn.

Prerequisites

To use USB redirection for DCV WorkSpaces, you need the following:

- Windows WorkSpace agent using DCV protocol version 2.2.0.2047 or later

- WorkSpaces Windows client version 5.30.0 or later

- You must have administrator access on your device to install or update USB redirection drivers.

Install USB redirection drivers

When you install the WorkSpaces client app, you have the option to install drivers required for USB redirection. The Amazon DCV USB drivers are installed through a separate installer that runs after the client app installation is complete.

> ⚠️ **Important**
>
> You must have administrator access on your device to install USB redirection drivers. You might be prompted to restart your device after installing the drivers.

You can also install USB redirection drivers from the toolbar **Devices** dialog.

Redirect a USB device

Your administrator can enable USB redirection on a Windows WorkSpace, which allows specified devices to be redirected to the virtual desktop. Devices that are allowed for redirection appear in the devices dialog from the in-session toolbar.

To redirect a USB device

1. In your WorkSpace session, choose the **Devices** icon in the toolbar.
2. In the devices dialog, locate the device you want to redirect.
3. Choose **Use on my remote WorkSpace** for the device.

> ⚠️ **Important**
>
> Redirected devices can only be used on the WorkSpace and are not available for use on the local machine.

Request access to blocked devices

In the devices dialog, you can see devices that are not allowed for USB redirection by your administrator. To request that your administrator enable a device for redirection, use the copy device details button next to the device and share the copied details with your administrator.

Update USB redirection drivers

When an update is available for the USB redirection drivers, a notification appears on the devices icon in the toolbar. Choose the notification to open the devices dialog, where you can follow the instructions to update the drivers.

> ⚠️ **Important**
>
> You must have administrator access on your device to update USB redirection drivers. You might be prompted to restart your device after updating the drivers.

Printing from a WorkSpace

The following printing methods are supported by Amazon WorkSpaces.

> ⓘ **Note**
>
> - The WorkSpaces clients for iPad, Android, Chromebook, Web Access, and Linux support network printing and cloud printing services. Local printing is not currently supported for the iPad, Android, Chromebook, Web Access, and Linux clients.
>
> - Local printer redirection is not available for Linux WorkSpaces, regardless of the client being used to access them.
>
> - If you're using a PCoIP zero client device to connect to your WorkSpace and you're having trouble using a USB printer or other USB peripheral devices, contact your WorkSpaces administrator for assistance. For more information, see USB printers and other USB peripherals aren't working for PCoIP zero clients in the *Amazon WorkSpaces Administration Guide*.

Printing methods

- Local printers
- Other printing methods

Local printers

Windows WorkSpaces support local printer redirection. When you print from an application in your WorkSpace, the local printers are contained in your list of available printers. The local printers have "(Local – *workspace username.directory name.client computer name*)" appended to the printer's display name. Select one of the local printers and your documents are printed on that printer.

In some cases, you need to download and install the driver for your local printer manually on the WorkSpace. When you install a printer driver on your WorkSpace, there are different types of drivers that you might encounter:

- Add Printer wizard driver. This driver includes only the printer drivers, and is for users who are familiar with installation using the Add Printer wizard in Windows.

- Printer model-specific drivers that do not require communication with the printer. In these cases, you can install the printer driver directly.
- Printer model-specific drivers that require communication with the printer. In these cases, you can use the printer driver files to add a local printer using an existing port (LPT1:). After selecting the port, you can choose **Have Disk** and select the `.INF` file for the printer driver.

After installing the printer driver, you must restart (reboot) the WorkSpace for the new printer to be recognized.

If you cannot print to your local printer from your WorkSpace, make sure that you can print to your local printer from your client computer. If you cannot print from your client computer, refer to the printer documentation and support to resolve the issue. If you can print from your client computer, contact AWS Support for further assistance.

Other printing methods

You can also use one of the following methods to print from a Windows or Linux WorkSpace:

- If your organization exposes printers through Active Directory, you can connect your WorkSpace to printers on your internal company network.
- Print to a file, transfer the file to your local desktop and print the file locally to an attached printer.

Troubleshoot WorkSpaces client issues

The following are common issues that you might have with your WorkSpaces client.

Issues

- I didn't receive an email with my Amazon WorkSpaces registration code
- After logging in, the Windows client application displays only a white page and I cannot connect to my WorkSpace
- My WorkSpaces client gives me a network error, but I am able to use other network-enabled apps on my device
- It sometimes takes several minutes to log in to my Windows WorkSpace
- When I try to log in, the Amazon WorkSpaces Windows client gets stuck on the "Preparing your login page" screen
- When I try to log in, I get the error message: "No network. Network connection lost. Check your network connection or contact your administrator for help."
- The Amazon WorkSpaces Windows client application login page is very tiny
- I see the following error message: "WorkSpace Status: Unhealthy. We were unable to connect you to your WorkSpace. Please try again in a few minutes."
- Sometimes I am logged off of my Windows WorkSpace, even though I closed the session, but did not log off
- I forgot my password and tried to reset it, but I didn't receive an email with a reset link
- I can't connect to the internet from my WorkSpace
- I installed a third-party security software package and now I can't connect to my WorkSpace
- I am getting a "network connection is slow" warning when connected to my WorkSpace
- I got an "invalid certificate" error on the client application. What does that mean?
- I'm having trouble when I try to connect to my Windows WorkSpace using Web Access
- I see the following error message: "Device can't connect to the registration service. Check your network settings."
- I skipped an update to my client application and am having trouble updating my client to the latest version
- My headset doesn't work in my WorkSpace
- I am unable to install the Android client application on my Chromebook

- [I'm getting the wrong characters when I type; for example, I get \ and | when I try to type quotation marks (' and ")](#)

- [The WorkSpaces client application won't run on my Mac](#)

- [I'm having trouble using the Windows logo key in Windows WorkSpaces when working on a Mac](#)

- [My WorkSpace looks blurry on my Mac](#)

- [I'm having trouble copying and pasting](#)

- [My screen is flickering or not updating properly, or my mouse isn't clicking in the right place](#)

- [The WorkSpaces client for Windows prompts to update to a version that is already installed](#)

- [I don't see video-in devices listed under Devices on my WorkSpaces Windows client](#)

I didn't receive an email with my Amazon WorkSpaces registration code

Contact your WorkSpaces administrator for assistance.

After logging in, the Windows client application displays only a white page and I cannot connect to my WorkSpace

This problem can be caused by expired Verisign/Symantec certificates on your client computer (not your WorkSpace). Remove the expired certificate and launch the client application again.

To find and remove expired Verisign/Symantec certificates

1. In the Windows **Control Panel** on your client computer (not your WorkSpace), choose **Network and Internet**.

2. Choose **Internet Options**.

3. In the **Internet Properties** dialog box, choose **Content**, **Certificates**.

4. In the **Certificates** dialog box, choose the **Intermediate Certificate Authorities** tab. In the list of certificates, select all certificates that were issued by Verisign or Symantec that are also expired, and choose **Remove**. Do not remove any certificates that are not expired.

5. On the **Trusted Root Certificate Authorities** tab, select all certificates that were issued by Verisign or Symantec that are also expired, and choose **Remove**. Do not remove any certificates that are not expired.

6.   Close the **Certificates** dialog box and the **Internet Properties** dialog box.

My WorkSpaces client gives me a network error, but I am able to use other network-enabled apps on my device

The WorkSpaces client applications rely on access to resources in the AWS Cloud, and require a connection that provides at least 1 Mbps download bandwidth. If your device has an intermittent connection to the network, the WorkSpaces client application might report an issue with the network.

WorkSpaces enforces the use of digital certificates issued by Amazon Trust Services, as of May 2018. Amazon Trust Services is already a trusted Root certificate authority (CA) on the operating systems that are supported by WorkSpaces. If the Root CA list for your operating system is not up to date, your device cannot connect to WorkSpaces and the client gives a network error.

To recognize connection issues due to certificate failures

- PCoIP zero clients — The following error message is displayed:

```
Failed to connect. The server provided a certificate that is invalid. See below for
 details:
- The supplied certificate is invalid due to timestamp
- The supplied certificate is not rooted in the devices local certificate store
```

- Other clients — The health checks fail with a red warning triangle for **Internet**.

To resolve certificate failures

Use one of the following solutions for certificate failures.

- For the Windows client, download and install the latest Windows client application from https://clients.amazonworkspaces.com/ . During installation, the client application ensures that your operating system trusts certificates issued by Amazon Trust Services. If updating your client does not resolve the issue, contact your Amazon WorkSpaces administrator.

- For all other clients, contact your Amazon WorkSpaces administrator.

It sometimes takes several minutes to log in to my Windows WorkSpace

Group Policy settings that are set by your system administrator can cause a delay on login after your Windows WorkSpace has been launched or rebooted. This delay occurs while the Group Policy settings are being applied to the WorkSpace, and is normal.

When I try to log in, the Amazon WorkSpaces Windows client gets stuck on the "Preparing your login page" screen

When starting versions 3.0.4 and 3.0.5 of the WorkSpaces Windows client application on a Windows 10 machine, the client might get stuck on the "Preparing your login page" screen. To avoid this issue, either upgrade to version 3.0.6 of the Windows client application or do not run the Windows client application with administrator (elevated) privileges.

When I try to log in, I get the error message: "No network. Network connection lost. Check your network connection or contact your administrator for help."

When you try to log in to your WorkSpace using some 3.0+ versions of the Windows, macOS, and Linux WorkSpaces client applications, you might receive a "No network" error on the login page if you have specified a custom proxy server.

- **Windows client** — To avoid this issue with the Windows client, upgrade to version 3.0.12 or later. For more information about configuring the proxy server settings in the Windows client, see [Proxy Server for Windows Client](#).

- **macOS client** — To work around this issue, use the proxy server that's specified in the device operating system instead of using a custom proxy server. For more information about configuring the proxy server settings in the macOS client, see [Proxy Server for macOS Client](#).

- **Linux client** — To avoid this issue with the Linux client, upgrade to version 3.1.5 or later. If you can't upgrade, you can work around this issue by using the proxy server that's specified in the device operating system instead of using a custom proxy server. For more information about configuring the proxy server settings in the Linux client, see [Proxy Server for Linux Client](#).

The Amazon WorkSpaces Windows client application login page is very tiny

Running the WorkSpaces Windows client with administrator (elevated) privileges might result in viewing issues in high DPI environments. To avoid these issues, run the client in user mode instead.

I see the following error message: "WorkSpace Status: Unhealthy. We were unable to connect you to your WorkSpace. Please try again in a few minutes."

If you just started or restarted your WorkSpace, wait a few minutes, and then try to log in again.

If you continue to receive this error message, you can try the following actions (if your WorkSpaces administrator has enabled you to do them):

- [Restarting a WorkSpace](#)
- [Rebuilding a WorkSpace](#)

If you are unable to restart or rebuild the WorkSpace yourself, or if you continue to see the error message after doing so, contact your WorkSpaces administrator for assistance.

Sometimes I am logged off of my Windows WorkSpace, even though I closed the session, but did not log off

Your system administrator applied a new or updated Group Policy setting to your Windows WorkSpace that requires a logoff of a disconnected session.

I forgot my password and tried to reset it, but I didn't receive an email with a reset link

Contact your WorkSpaces administrator for assistance. Contact your company's IT department if you don't know who your WorkSpaces administrator is.

I can't connect to the internet from my WorkSpace

WorkSpaces cannot communicate with the internet by default. Your Amazon WorkSpaces administrator must explicitly provide internet access.

I installed a third-party security software package and now I can't connect to my WorkSpace

You can install any type of security or firewall software on your WorkSpace, but WorkSpaces requires that certain inbound and outbound ports are open on the WorkSpace. If the security or firewall software that you install blocks these ports, the WorkSpace might not function correctly or might become unreachable. For more information, see [Port Requirements for WorkSpaces](#) in the *Amazon WorkSpaces Administration Guide*.

To restore your WorkSpace, [rebuild your WorkSpace](#) if you still have access to it, or ask your Amazon WorkSpaces administrator to rebuild your WorkSpace. You then have to reinstall the software and properly configure port access for your WorkSpace.

I am getting a "network connection is slow" warning when connected to my WorkSpace

If the round-trip time from your client to your WorkSpace is longer than 100ms, you can still use your WorkSpace, but this might result in a poor experience. A slow round-trip time can be caused by many factors, but the following are the most common causes:

- You are too far from the AWS Region that your WorkSpace resides in. For the best WorkSpace experience, you should be within 2,000 miles of the AWS Region that your WorkSpace is in.

- Your network connection is inconsistent or slow. For the best experience, your network connection should provide at least 300 kbps, with capability to provide over 1 Mbps when viewing video or using graphics-intensive applications on your WorkSpace.

I got an "invalid certificate" error on the client application. What does that mean?

The WorkSpaces client application validates the identity of the WorkSpaces service through an SSL/TLS certificate. If the root certificate authority of the Amazon WorkSpaces service cannot

be verified, the client application displays an error and prevents any connection to the service. The most common cause is a proxy server that is removing the root certificate authority and returning an incomplete certificate to the client application. Contact your network administrator for assistance.

I'm having trouble when I try to connect to my Windows WorkSpace using Web Access

Windows WorkSpaces rely on a specific login screen configuration to enable you to log in from your Web Access client. Your Amazon WorkSpaces administrator might need to configure Group Policy and Security Policy settings to enable you to log in to your WorkSpace from your Web Access client. If these settings are not correctly configured, you might experience long login times or black screens when you try to log in to your WorkSpace. Contact your Amazon WorkSpaces administrator for assistance.

> ⚠️ **Important**
>
> Beginning October 1, 2020, customers will no longer be able to use the Amazon WorkSpaces Web Access client to connect to Windows 7 custom WorkSpaces or to Windows 7 Bring Your Own License (BYOL) WorkSpaces.

I see the following error message: "Device can't connect to the registration service. Check your network settings."

When a registration service failure occurs, you might see the following error message on the **Connection Health Check** page: "Your device is not able to connect to the WorkSpaces Registration service. You will not be able to register your device with WorkSpaces. Please check your network settings."

This error occurs when the WorkSpaces client application can't reach the registration service. Contact your Amazon WorkSpaces administrator for assistance.

I skipped an update to my client application and am having trouble updating my client to the latest version

If you've skipped an update to your Amazon WorkSpaces Windows client application and now want to update to the latest version of the client, see [Update the WorkSpaces Windows client application to a newer version](#).

If you've skipped an update to your Amazon WorkSpaces macOS client application and now want to update to the latest version of the client, see [Update the WorkSpaces macOS client application to a newer version](#).

My headset doesn't work in my WorkSpace

If you're using the Android, iPad, macOS, Linux, or Windows client application for Amazon WorkSpaces, and you're having trouble using your headset in your WorkSpace, try the following steps:

1. Disconnect from your WorkSpace (choose **Amazon WorkSpaces**, **Disconnect WorkSpace**).

2. Unplug your headset, and then plug it back in. Verify that it works on your local computer or tablet. For a USB headset, make sure that it shows up as a playback device locally on your computer or tablet:

   - For Windows, check the devices listed in the **Control Panel** under **Hardware and Sound** > **Sound**. In the **Sound** dialog box, choose the **Playback** tab.

   - For macOS, choose the **Apple menu** > **System Preferences** > **Sound** > **Output**.

   - For iPad, open the **Control Center** and tap the **AirPlay**

     ![AirPlay icon]

     button.

   - For Chromebook, open the system tray, and then choose the headphone icon next to the volume slider. Select the devices that you want to use for audio input and output.

3. Reconnect to your WorkSpace.

Your headset should now work in your WorkSpace. If you're still having trouble with your headset, contact your WorkSpaces administrator.

> **Note**
>
> Audio currently is not supported on Linux WorkSpaces using the DCV.

I am unable to install the Android client application on my Chromebook

Version 2.4.13 is the final release of the Amazon WorkSpaces Chromebook client application. Because [Google is phasing out support for Chrome Apps](#), there will be no further updates to the WorkSpaces Chromebook client application, and its use is unsupported.

For [Chromebooks that support installing Android applications](#), we recommend using the [WorkSpaces Android client application](#) instead.

If you are using a Chromebook launched before 2019, see the [installation steps for Chromebooks launched before 2019](#) before attempting to install the Amazon WorkSpaces Android client application.

In some cases, your WorkSpaces administrator might need to enable your Chromebook to install Android applications. If you are unable to install the Android client application on your Chromebook, contact your WorkSpaces administrator for assistance.

I'm getting the wrong characters when I type; for example, I get \ and | when I try to type quotation marks (' and ")

This behavior might occur if your device is not set to the same language as your WorkSpace, or if you're using a language-specific keyboard, such as a French keyboard.

To resolve this issue, see [Language and keyboard settings for WorkSpaces](#).

The WorkSpaces client application won't run on my Mac

If you try to run older versions of the WorkSpaces client application on your Mac, the client application might not start, and you might receive security warnings such as the following:

```
"WorkSpaces.app will damage your computer. You should move it to the Trash."
```

```
"WorkSpaces.app is damaged and can't be opened. You should move it to the Trash."
```

If you use macOS 10.15 (Catalina) or later, you must use version 3.0.2 or later of the macOS client.

Versions 2.5.11 and earlier of the macOS client can no longer be installed on macOS devices. These versions also no longer work on devices with macOS Catalina or later.

If you are using version 2.5.11 or earlier and you upgrade from an older version of macOS to Catalina or later, you will no longer be able to use the 2.5.11 or earlier client.

To resolve this issue, we recommend that affected users upgrade to the latest version of the macOS client that is available for download at https://clients.amazonworkspaces.com/ .

For more information about installing or updating the macOS client, see Setup and installation.

I'm having trouble using the Windows logo key in Windows WorkSpaces when working on a Mac

By default, the Windows logo key on a Windows keyboard and the Command key on an Apple keyboard are both mapped to the Ctrl key when you're using the Amazon WorkSpaces macOS client application. If you want to change this behavior so that these two keys are mapped to the Windows logo key, see Remap the Windows logo key or the Command key for instructions on how to remap these keys.

My WorkSpace looks blurry on my Mac

If your screen resolution in WorkSpaces is low and objects look blurry, you need to turn on high DPI mode and adjust the display scaling settings on your Mac. For more information, see Enabling high DPI display for WorkSpaces.

I'm having trouble copying and pasting

If you are having trouble copying and pasting, confirm the following to help solve your issue:

- Your administrator has enabled clipboard redirection for your WorkSpace. Contact you organization's WorkSpaces administrator or IT department for support.
- The uncompressed object size is under the maximum of 20 MB.

- The data type that you copied is supported for clipboard redirection. For a list of supported data types, see Understanding HP Anyware Copy/Paste Feature in the Teradici documentation.

My screen is flickering or not updating properly, or my mouse isn't clicking in the right place

If you're using a version of the Amazon WorkSpaces Windows client application prior to version 3.1.4, you might experience the following screen update issues, caused by hardware acceleration:

- The screen might have flickering black boxes in some places.

- The screen might not properly update on the WorkSpaces login page, or it might not properly update after you log in to your WorkSpace. You might see artifacts on the screen.

- Your mouse clicks might not be lined up with the cursor position on the screen.

To address these issues, we recommend upgrading to version 3.1.4 or later of the Windows client application. Starting with version 3.1.4, hardware acceleration is turned off by default in the Windows client application.

However, if you need to enable hardware acceleration in version 3.1.4 or later, for example if you're experiencing slow performance when using the client, see Manage hardware acceleration.

If you need to use version 3.1.3 or earlier of the Windows client application, you can disable hardware acceleration in Windows. To disable hardware acceleration for version 3.1.3 or earlier, see Managing Hardware Acceleration. Disabling hardware acceleration in Windows might affect the performance of other Windows applications.

The WorkSpaces client for Windows prompts to update to a version that is already installed

The WorkSpaces client installer for Windows allows users to install the client just for themselves or for all users of the machine. If it's installed for a single user, other users on the same Windows machine will not be able to run the WorkSpaces client application. If it is installed for all users, all users on the same Windows machine will be able to run the application.

When the WorkSpaces client for Windows is launched, it detects if there is an update and displays a dialog asking the user if they would like to update the application as shown in the following example.
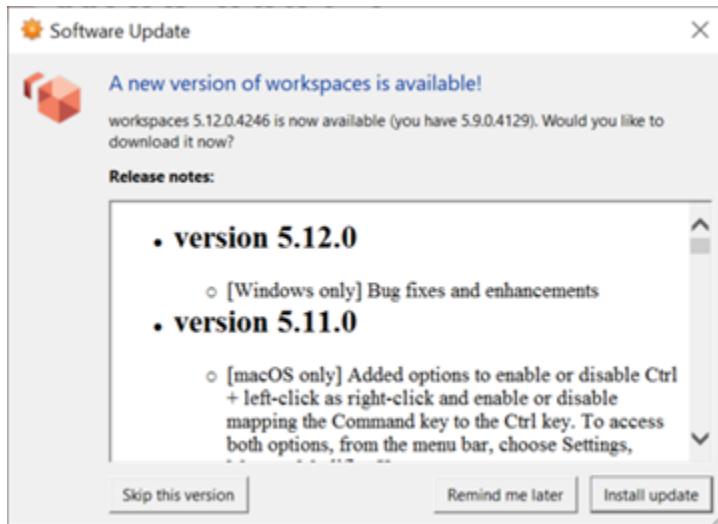
Users might continue to see this prompt even after they have updated to the version shown on the prompt. This is caused by having multiple versions of the WorkSpaces client installed on the same computer. For example, a user might have installed the WorkSpaces client just for themselves, and then later installed a newer version of the client for all users on the same Windows machine. The user will continue to see the update prompt if they continue to open the older version of the client after performing the update.

Users should complete one of the following procedures to uninstall the old version of the WorkSpaces client from their computers. This ensures that only the new version of the client is opened next time it's launched.

Uninstall an old version of the WorkSpaces client for Windows using the Control Panel

1. Open the Windows start menu.

2. Search for the **Control Panel** and open it.

3. In the **Control Panel**, open **Programs and Features**.

4. In the **Uninstall or change a program** window, scroll and find the different versions of Amazon WorkSpaces that are installed.

5. Select the older version installed, and choose **Uninstall**. The installed version number is listed in the **Version** column.

6. Choose **Yes** if prompted to confirm the uninstall.

You might be required to restart your computer when the uninstall completes.

Remove the WorkSpaces client for Windows using the client installer

1. Choose **Install update** if you see the software update prompt when launching the WorkSpaces client application.

2. Choose **Next** on the **Amazon WorkSpaces Setup** screen of the installer.

   The installer will detect if the newer version of the WorkSpaces client is installed, and offer the option to repair or remove it.

3. Choose **Remove** to uninstall the newer version of the installer.

   You might be required to restart your computer when the uninstall completes.

4. Launch the WorkSpaces client again and choose **Install update** when you see the software update prompt.

5. Choose to install the client just for yourself or for all users of the machine. You choice here should be the same choice you made when you originally installed the WorkSpaces client for Windows. This will ensure that you don't see the repeated update prompts next time you launch the client.

I don't see video-in devices listed under Devices on my WorkSpaces Windows client

You might not have the Media Feature Pack installed on Windows, if you're using certain versions of Windows Operating System, such as Windows N. By default, the Media Feature Pack isn't installed on Windows N. To install it, see [Media Feature Pack for N versions of Windows 10](#), choose **Install Instructions**, and follow the instructions.