
Amazon WorkSpaces

User Guide

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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 get started with your WorkSpace.

Tasks

- [Complete your user profile \(p. 1\)](#)
- [Choose a client \(p. 1\)](#)
- [Determine your client version \(p. 2\)](#)
- [Determine your streaming protocol \(p. 2\)](#)
- [Verify networking requirements \(p. 2\)](#)
- [\(Optional\) Access the applications assigned to you \(p. 3\)](#)
- [\(Optional\) Integrate with WorkDocs \(p. 3\)](#)

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 [Change your password \(p. 5\)](#).

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, 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.

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

- [Android Client Application \(p. 27\)](#)

- [iPad Client Application \(p. 34\)](#)
- [Linux Client Application \(p. 41\)](#)
- [macOS Client Application \(p. 46\)](#)
- [PCoIP Zero Client \(p. 58\)](#)
- [Windows Client Application \(p. 58\)](#)

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 WorkSpaces Streaming Protocol (WSP). 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.

(Optional) Access the applications assigned to you

You use the Amazon WorkSpaces Application Manager client application on your Windows WorkSpace to install and access the applications that your Amazon WorkSpaces administrator has assigned to you.

To install and start assigned applications

1. To start the Amazon WorkSpaces Application Manager client application, choose the **Amazon WAM** shortcut on the desktop of your Windows WorkSpace.

If the shortcut is not available, see [Troubleshooting Amazon WAM Issues](#) in the *Amazon WAM User Guide*.
2. To find applications that have been assigned to you but have not been installed, choose **DISCOVER**.
3. To install an application, choose the triangle (install).
4. You can start your Amazon WAM applications by using the Amazon WorkSpaces Application Manager client application or the Windows Start menu. For more information, see [Getting Started](#) in the *Amazon WAM User Guide*.

(Optional) Integrate with WorkDocs

If your Amazon WorkSpaces administrator has enabled it, you can integrate your WorkSpace with Amazon WorkDocs. You can use Amazon WorkDocs to store, sync, and share your files. WorkDocs can automatically back up documents on your WorkSpace and sync documents to and from other devices such as a PC or Mac, so that you can access your data regardless of which desktop you are using.

Note

WorkDocs isn't available for use with Linux WorkSpaces.

To install WorkDocs on your WorkSpace

1. Choose (double-click) the **Install Amazon WorkDocs** desktop shortcut on your WorkSpace.
2. In the **Amazon WorkDocs Setup** dialog box, choose **Get Started**.
3. Ignore the prompt to provide a WorkDocs site URL, and instead choose **Enter a WorkSpaces registration code** under the **Next** button.
4. In the **Registration Code** box, enter the registration code that you received in your WorkSpaces welcome mail, and then choose **Next**.
5. In the **Username** and **Password** boxes, enter your WorkSpace login credentials, and then choose **Sign In**.
6. In the next dialog box, a folder is suggested for the location of your synced files. The default folder is `D:\Users\WorkSpaceUserName\WorkDocs`. To specify a different folder, choose **Change**. After you've made your choice, choose **Next**.
7. Choose which files you'd like to sync (either **Sync only the files and folders I select from WorkDocs** or **Sync all files and folders from WorkDocs**). To finish setting up, choose **Next**.
8. Open Windows File Explorer. You should now see your new `D:\Users\WorkSpaceUserName\WorkDocs` folder. To back up and sync your files, make sure to save your files to this location.
9. Install WorkDocs Drive on any other computers or devices that you'd like to sync files between. You can download the WorkDocs Drive client from <https://amazonworkdocs.com/clients>. When you log in to WorkDocs Drive, make sure to use your WorkSpace registration code, username, and password, as described earlier in this procedure.

Important

If you're installing WorkDocs Drive on a Mac, follow the instructions in [Installing Amazon WorkDocs Drive](#) in the *Amazon WorkDocs Administration Guide* in the *Amazon WorkDocs Administration Guide*.

For more information about working with WorkDocs Drive, see [Amazon WorkDocs Drive](#) in the *Amazon WorkDocs Administration Guide*.

Manage your WorkSpace from your client

If you use the [Windows client \(p. 58\)](#), the [macOS client \(p. 46\)](#), or the [Linux client \(p. 41\)](#) for WorkSpaces, you can perform the following management tasks directly from your client.

Note

You can perform these tasks only if they are enabled by your WorkSpaces administrator.

Tasks

- [Save your credentials \(p. 5\)](#)
- [Change your password \(p. 5\)](#)
- [Restart your WorkSpace \(p. 6\)](#)
- [Increase your the size of WorkSpace disks \(p. 6\)](#)
- [Change your WorkSpace compute type \(p. 7\)](#)
- [Switch the WorkSpace running mode \(p. 8\)](#)
- [Rebuild your WorkSpace \(p. 8\)](#)

Save your credentials

You can choose whether to save your credentials (your user name and password) 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.

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 Amazon 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 (~!@#%&*_-= ` \(){}[];:"'<>.,?/)

Restart your 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.

Increase your the size of WorkSpace disks

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 .
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 \(p. 6\)](#) for the changes to take effect. Save any open files before restarting the WorkSpace.

Change your WorkSpace compute type

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 .

If you're using...	Do this
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**.

Switch the WorkSpace running mode

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**.

Rebuild your 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**.

WorkSpaces client peripheral device support

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.amazonaws.cn/support/home#/>.

Device support might differ depending on which streaming protocol your WorkSpace is using, either PCoIP or WorkSpaces Streaming Protocol (WSP). 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.

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- [Webcams and other video devices \(p. 11\)](#)
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Monitors

The WorkSpaces Android client application supports a single monitor and the use of high DPI displays. For more information about display support in the WorkSpaces Android client application, see [Display Support for the Android Client \(p. 30\)](#). For more information about support for high DPI displays, see [WorkSpaces high DPI display support \(p. 14\)](#).

The WorkSpaces client applications for Linux, macOS, and Windows support multiple monitors and the use of high DPI displays.

Note

Multiple monitors aren't currently supported on Linux WorkSpaces using the WorkSpaces Streaming Protocol (WSP).

For more information about display support in the Linux, macOS, and Windows WorkSpaces client applications, including how to set up multiple monitors, see [Display Support for the Linux Client \(p. 43\)](#), [Display Support for the macOS Client \(p. 49\)](#), or [Display Support for the Windows Client \(p. 63\)](#).

For more information about support for high DPI displays, see [WorkSpaces high DPI display support \(p. 14\)](#).

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 \(p. 37\)](#).

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

To use languages or keyboards other than English, see [Amazon WorkSpaces language and keyboard support \(p. 20\)](#).

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 \(p. 83\)](#).

Note

Audio currently is not supported on Linux WorkSpaces using the WorkSpaces Streaming Protocol (WSP).

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 [Print from a Workspace \(p. 76\)](#).

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 using [Amazon WorkDocs \(p. 3\)](#) (if your WorkSpaces administrator has enabled it). You might also be able to email 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 WorkSpaces Streaming Protocol (WSP), 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 WSP WorkSpace.
2. Do one of the following, depending on which client you're using.

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

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 WSP 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.

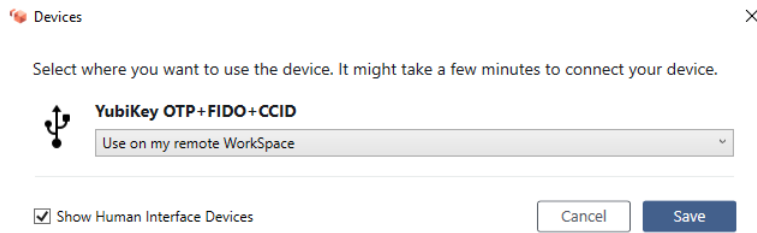
For more information about using smart cards with your WorkSpace, see [WorkSpaces client smart card support \(p. 17\)](#).


Hardware security keys

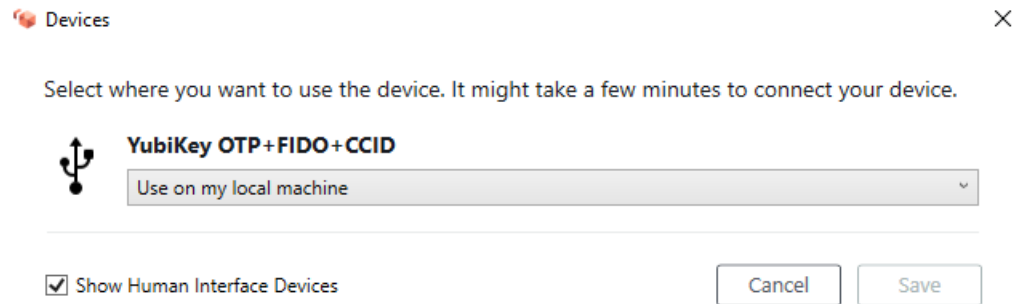
PCoIP Windows WorkSpaces support USB redirection for YubiKey U2F authentication with Windows WorkSpaces client apps. For more information, see [WorkSpaces USB redirection \(p. 25\)](#).

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**.



- 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**.



WorkSpaces high DPI display support

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
- 7680x4320 – FUHD (Full Ultra HD), also known as 8K 4320p

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.

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.

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, the performance of your Workspace might be unacceptably affected by high DPI mode. 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.

Note

Graphics bundles support only a single monitor configuration with a maximum resolution of 2560x1600.

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 \(p. 30\)](#), [Display Support for the Linux Client \(p. 43\)](#), [Display Support for the macOS Client \(p. 49\)](#), or [Display Support for the Windows Client \(p. 63\)](#).

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.

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.
- If you're using a WorkSpaces Streaming Protocol (WSP) Windows WorkSpace, you can't adjust the display scale settings. Instead, you'll see the message "The display settings cannot be changed from a remote session."

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 WorkSpaces Streaming Protocol (WSP) Windows WorkSpace. At this time, you can't adjust the display scale settings for a WSP 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.

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.

WorkSpaces client smart card support

Smart cards are supported if your Windows or Linux WorkSpace is using the WorkSpaces Streaming Protocol (WSP). If your WorkSpace is using the PCoIP protocol, the WorkSpaces clients 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.

Note

- Both [Common Access Card \(CAC\)](#) and [Personal Identity Verification \(PIV\)](#) 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 WSP protocol.
- For in-session authentication and pre-session authentication on Linux or Windows WorkSpaces, only one smart card is currently allowed at a time.
- In-session authentication is available in all Regions where WSP is supported. Pre-session authentication is available in the following Regions:
 - Asia Pacific (Sydney) Region
 - Asia Pacific (Tokyo) Region
 - Europe (Ireland) Region
 - Amazon 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 and the macOS client application version 3.1.5 or later are currently 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.

Use a smart card to log in to your WorkSpace

To use your smart card to log in to your WorkSpace

1. Open version 3.1.1 or later of the WorkSpaces Windows client application or version 3.1.5 or later of the WorkSpaces macOS client application.
2. 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.

3. 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.
4. On the login page, choose **Insert your smart card**.
5. The **Certificates** dialog box appears. Select your certificate, and then choose **OK**.
6. The **Smart Card** dialog box appears. Enter your PIN, and then choose **OK**.
7. On the **Starting Workspace** page, enter your PIN again, and then choose **Submit**.

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

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

You can also 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, contact your WorkSpaces administrator for help.

Use a smart card with Chrome or Firefox on Linux WorkSpaces

To use your smart card with the Chrome browser

1. Log in to your Linux Workspace using the WorkSpaces for Windows client application.
2. Open Terminal (**Applications > System Tools > MATE Terminal**).
3. Run the following command:


```
cd; modutil -dbdir sql:.pki/nssdb/ -add "OpenSC" -libfile /lib64/opensc-pkcs11.so
```

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: `/lib64/opensc-pkcs11.so`
6. Choose **OK**.

Amazon WorkSpaces language and keyboard support

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 WorkSpaces Streaming Protocol (WSP).

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 Amazon 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 WorkSpaces Streaming Protocol (WSP)

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're using a language-specific keyboard, you might want your local client device and your remote Windows WorkSpace using the WorkSpaces Streaming Protocol (WSP) to automatically use the same keyboard layout. How you do this depends 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 to automatically use the same keyboard layout on your local client device and your remote WorkSpace.

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.
3. Start your WorkSpaces client application and log into your WSP WorkSpace.

4. While in your WorkSpace, press any key. The keyboard layout for your WorkSpace is automatically set to the same one that you chose for your client device.

Whenever you start typing in your WSP WorkSpace, the keyboard layout used in your WorkSpace will now automatically be the same as the keyboard layout that's selected on your client device.

To change the display language in your WorkSpaces desktop client application, see [Client Language \(Linux\) \(p. 43\)](#), [Client Language \(macOS\) \(p. 49\)](#), or [Client Language \(Windows\) \(p. 62\)](#).

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 to automatically use the same keyboard layout on your local client device and your remote WorkSpace.

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. Whenever you start typing in your WorkSpace, the keyboard layout used in your WorkSpace will now automatically be the same as the keyboard layout that's selected on your client device.

To change the display language in your WorkSpaces desktop client application, see [Client Language \(Linux\) \(p. 43\)](#), [Client Language \(macOS\) \(p. 49\)](#), or [Client Language \(Windows\) \(p. 62\)](#).

To use the Japanese 106/109 keyboard layout

If you're using the Japanese 106/109 keyboard layout, use the following procedure to automatically use the same keyboard layout on your local client device and your remote WorkSpace.

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. Whenever you start typing in your WorkSpace, the keyboard layout used in your WorkSpace will now automatically be the same as the keyboard layout that's selected on your client device.

To change the display language in your WorkSpaces desktop client application, see [Client Language \(Linux\) \(p. 43\)](#), [Client Language \(macOS\) \(p. 49\)](#), or [Client Language \(Windows\) \(p. 62\)](#).

WorkSpaces USB redirection

Universal Serial Bus (USB) is used to connect computers to devices, such as scanners, printers, external drives, and security keys. PCoIP Windows WorkSpaces support redirection of a locally attached YubiKey for universal 2nd factor authentication from the Windows WorkSpaces client application.

Requirements

- USB redirection is disabled by default on Windows PCoIP WorkSpaces. You must enable USB redirection for WorkSpaces. You can configure USB allowed and unallowed 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

Amazon WorkSpaces currently supports USB redirection only for YubiKey U2F. Other types of USB devices might be able to be redirected. However, they are not supported and might not work properly.

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

Control, interrupt, and bulk transfer types from USB devices are technically able to be redirected. Most USB mass storage devices and some scanners and printers use these data transfer types. 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 does not work with PCoIP WorkSpaces for U2F authentication:

- Kensington Security Key

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 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.

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.

To reinstall USB redirection drivers


If you run into issues with the USB redirection drivers, follow these steps to do a clean re-installation 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. 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
```

WorkSpaces Clients

You can connect to your WorkSpace using the client application for a supported device or a web browser.

Clients

- [Android Client Application \(p. 27\)](#)
- [iPad Client Application \(p. 34\)](#)
- [Linux Client Application \(p. 41\)](#)
- [macOS Client Application \(p. 46\)](#)
- [PCoIP Zero Client \(p. 58\)](#)
- [Windows Client Application \(p. 58\)](#)

WorkSpaces Android client application

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

Contents

- [Requirements \(p. 27\)](#)
- [Setup and installation \(p. 28\)](#)
- [Connect to your WorkSpace \(p. 28\)](#)
- [Gestures \(p. 28\)](#)
- [Sidebar menu \(p. 29\)](#)
- [Keyboard \(p. 30\)](#)
- [Trackpad mode \(p. 30\)](#)
- [Display support \(p. 30\)](#)
- [Disconnect \(p. 31\)](#)
- [Clipboard support \(p. 31\)](#)
- [Release notes \(p. 31\)](#)

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. If you have problems with a device, you can report the problem on the [WorkSpaces forum](#).

Note

Versions of the Android client application after 2.4.15 require devices with Android OS 9 and later.

- Devices that support running 64-bit applications.

Note

- The WorkSpaces Android client application is not available for the WorkSpaces Streaming Protocol (WSP).

- 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.

To download and install the client application

1. On your Android device, open <https://clients.amazonworkspaces.awsapps.cn/> and choose the **Android** link.
2. Download and install the application.
3. Verify that the Amazon WorkSpaces client application icon appears on one of the device desktops.

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 user name and password 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 \(p. 29\)](#).

Two finger scroll

Scrolls vertically.

Two finger pinch

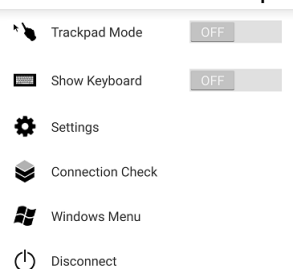
Zooms display in or out.

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 \(p. 30\)](#).



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 \(p. 29\)](#).

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 WorkSpaces high DPI display support (p. 14) .

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" \(p. 85\)](#).

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
3.0.4	October 14, 2021	<ul style="list-style-type: none"> Resolves crashing issues related to invalid cursor data Bug fixes
3.0.2	July 13, 2021	Minor enhancements and fixes
3.0.1	June 30, 2021	<ul style="list-style-type: none"> Adds support for self-service WorkSpace management capabilities.

Release	Date	Changes
		<ul style="list-style-type: none"> • Adds support for certificate-based trusted devices.
2.4.21	May 20, 2021	<ul style="list-style-type: none"> • Adds 2800x1752 and High DPI Mode in resolution options • Addresses a crash scenario related to cursor rendering • Minor enhancements and fixes
2.4.20	March 25, 2021	<ul style="list-style-type: none"> • Addresses a crash issue at login • Minor enhancements and fixes
2.4.19	February 22, 2021	Enhanced support for resolution 2560x1440
2.4.18	October 19, 2020	<ul style="list-style-type: none"> • 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	Adds 64-bit support for Android 9 and 10
2.4.15	June 24, 2019	Adds support for mouse cursor contextual shape changes
2.4.14		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • Resolves an issue that makes the login page bounce on a few devices • Minor fixes
2.4.11		<ul style="list-style-type: none"> • Resolves an issue with content being selected with two-finger scrolling • Minor fixes
2.4.10		Improves support for Japanese keyboard layouts
2.4.9		Adds support for Samsung Galaxy Note 9
2.4.7		<ul style="list-style-type: none"> • Improves clipboard redirection • Improves DeX startup
2.4.6		Adds support for uniform resource identifiers (URIs), which enable login orchestration

Release	Date	Changes
2.4.5		<ul style="list-style-type: none"> • 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
2.4.4		Minor improvements to session provision handling
2.4.2		<ul style="list-style-type: none"> • Minor fixes • Improves copy and paste
2.4.0		<ul style="list-style-type: none"> • New logo • Improves the user interface and stability
2.3.4		<ul style="list-style-type: none"> • 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
2.2.0		<ul style="list-style-type: none"> • Adds support for the German language • Improves the Japanese user interface • Improves stability
2.1.0		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • Adds support for saving registration codes, enabling you to switch WorkSpaces without re-entering the registration codes • Improves usability and stability
1.0.15		<ul style="list-style-type: none"> • Adds advanced connection health checks, enabling you to troubleshoot connection issues • Improves stability
1.0.11		<ul style="list-style-type: none"> • Improves the user interface and login experience • Adds support for choosing the screen resolution • Adds support for choosing the scrolling direction
1.0.10		<ul style="list-style-type: none"> • Improves the login experience • Adds time zone synchronization between the local device and the WorkSpace
1.0.9		Improves the login experience

Release	Date	Changes
1.0		Initial release

WorkSpaces iPad client application

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

Contents

- [Requirements \(p. 34\)](#)
- [Setup and installation \(p. 34\)](#)
- [Connect to your WorkSpace \(p. 35\)](#)
- [Gestures \(p. 35\)](#)
- [Radial menu \(p. 35\)](#)
- [Keyboard and command shortcuts \(p. 37\)](#)
- [Mouse modes \(p. 37\)](#)
- [Swiftpoint GT, ProPoint, or PadPoint mouse \(p. 37\)](#)
- [Disconnect \(p. 38\)](#)
- [Clipboard support \(p. 38\)](#)
- [Release notes \(p. 38\)](#)

Requirements

The WorkSpaces iPad client application requires the following:

- iPad 2 or later with iOS 8.0 or later
- iPad Retina with iOS 8.0 and later
- iPad Mini with iOS 8.0 and later
- iPad Pro with iOS 9.0 and later

Note

- The Amazon WorkSpaces iPad client application is not available for the WorkSpaces Streaming Protocol (WSP).
- 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 or later, 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 user name and password 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 \(p. 35\)](#).

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 \(p. 37\)](#).



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 \(p. 37\)](#).



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 \(p. 37\)](#).

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 \(p. 35\)](#).

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" \(p. 85\)](#).

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
2.4.18	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
2.4.15	June 28, 2020	<ul style="list-style-type: none">• 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

Release	Date	Changes
2.4.14	April 17, 2020	<ul style="list-style-type: none"> Running the client application on a jailbroken device is no longer supported Minor bug fixes
2.4.13	February 28, 2020	Minor bug fixes
2.4.11	October 28, 2019	<ul style="list-style-type: none"> 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
2.4.4		<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> Adds support for the Swiftpoint GT mouse scroll wheel Minor improvements to session provision handling
2.4.2		<ul style="list-style-type: none"> Minor fixes Improves copy and paste Adds initial support for the Swiftpoint GT mouse (the scroll wheel is not supported)
2.4.0		<ul style="list-style-type: none"> New logo Improves the user interface and stability
2.2.4		Localization enhancements

Release	Date	Changes
2.2.3		<ul style="list-style-type: none"> • 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
2.2.0		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • Adds support for the following new WorkSpace states: STOPPING and STOPPED • Resolves minor bugs and improves stability
2.0.0		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • 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
1.0.9		<ul style="list-style-type: none"> • Improves the user interface and login experience • Adds support for choosing the screen resolution • Adds support for choosing the scrolling direction
1.0.8		<ul style="list-style-type: none"> • 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

Release	Date	Changes
1.0.5		<ul style="list-style-type: none"> Improves the login experience Improves network connectivity
1.0.4		Improves the login experience
1.0.3		Improves the login experience
1.0.2		<ul style="list-style-type: none"> 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 \(p. 41\)](#)
- [Setup and installation \(p. 42\)](#)
- [Connecting to your WorkSpace \(p. 42\)](#)
- [Manage your login information \(3.0+ clients only\) \(p. 42\)](#)
- [Client views \(p. 43\)](#)
- [Client language \(p. 43\)](#)
- [Display support \(p. 43\)](#)
- [Proxy servers \(p. 44\)](#)
- [Command shortcuts \(p. 44\)](#)
- [Clipboard redirection \(p. 45\)](#)
- [Disconnect \(p. 45\)](#)
- [Release notes \(p. 45\)](#)

Requirements

The WorkSpaces Linux client application requires 64-bit Ubuntu 18.04 (AMD64).

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*.
- The WorkSpaces Linux client application is not available for the WorkSpaces Streaming Protocol (WSP).
- 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.

Setup and installation

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

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 user name and password 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 (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** 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

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 Value, Standard, Performance, Power, PowerPro, and GraphicsPro 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

Graphics bundles support only a single monitor configuration with a maximum resolution of 2560x1600.

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 [WorkSpaces high DPI display support \(p. 14\)](#).

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:

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.
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 username and password are not supported.

To use 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.

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 WorkSpaces Linux client supports the following command shortcuts:

- Ctrl+Alt+Enter—Toggle full screen display

Clipboard redirection

Clipboard redirection is not currently supported for the Linux client application.

Disconnect

To disconnect the Linux 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 **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 **End Session** dialog box, choose **Yes**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.

Release notes

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

Release	Date	Changes
4.0.1	August 12, 2021	Minor bug fixes and enhancements.
3.1.9	July 1, 2021	Minor bug fixes and enhancements.
3.1.8	June 3, 2021	<ul style="list-style-type: none"> • Fixes an audio output issue • Minor bug fixes and enhancements
3.1.7	May 6, 2021	Minor bug fixes and enhancements
3.1.5	April 2, 2021	Minor bug fixes and enhancements
3.1.4	March 16, 2021	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Improves Alt key mapping • Minor bug fixes and enhancements
3.1.2	January 8, 2021	Minor bug fixes and enhancements
3.1.0	December 1, 2020	Minor bug fixes and enhancements
3.0.12	November 10, 2020	Adds enhancements to the session reconnect experience
3.0.11	October 02, 2020	<ul style="list-style-type: none"> • 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 with the backslash and underscore keys not being recognized inside the WorkSpace on Japanese language keyboards

Release	Date	Changes
		<ul style="list-style-type: none"> Minor bug fixes and enhancements
3.0.10	September 16, 2020	Minor bug fixes and enhancements
3.0.9	August 14, 2020	Minor bug fixes and enhancements
3.0.8	July 30, 2020	<ul style="list-style-type: none"> 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	Minor bug fixes and enhancements
3.0.6	April 29, 2020	<ul style="list-style-type: none"> Adds support for toggling between high DPI and standard DPI displays Resolves an issue with the user interface displaying a login prompt if single sign-on (SSO) is enabled for Amazon WorkDocs Resolves an issue where the Windows logo key did not map correctly into the WorkSpace Minor bug fixes and enhancements
3.0.4	March 3, 2020	Minor bug fixes and enhancements
3.0.1	December 19, 2019	Bug fixes and UI enhancements
3.0.0	November 25, 2019	<ul style="list-style-type: none"> Initial release of Linux client Ubuntu Linux 18.04 support Friendly registration code labels

WorkSpaces macOS client application

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

Contents

- [Requirements \(p. 47\)](#)
- [Setup and installation \(p. 47\)](#)
- [Determine your client version \(p. 47\)](#)
- [Connect to your WorkSpace \(p. 47\)](#)
- [Manage your login information \(3.0+ clients only\) \(p. 48\)](#)
- [Client views \(p. 49\)](#)
- [Client language \(p. 49\)](#)
- [Display support \(p. 49\)](#)
- [Proxy servers \(p. 50\)](#)
- [Command shortcuts \(p. 51\)](#)
- [Remap the Windows logo key or the Command key \(p. 51\)](#)
- [Disconnect \(p. 52\)](#)
- [Clipboard support \(p. 52\)](#)
- [Release notes \(p. 52\)](#)

Requirements

The 3.0+ versions of the client application require macOS 10.12 (Sierra) or later.

The 1.0+ or 2.0+ versions of the client application require OS X 10.8.1 or later.

Important

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. We recommend that affected users upgrade to the latest version of the macOS client that is available for download at [Amazon WorkSpaces Client Downloads](#).

Note

If your Workspace is located in the Asia Pacific (Mumbai) Region, you must use version 3.1.3 or later of the Amazon WorkSpaces macOS 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 macOS device, open [Amazon WorkSpaces Client Downloads](#) and choose the **MacOS X** link.
2. Download and install the application.
3. Verify that the Amazon WorkSpaces client application icon appears on the desktop.

If you're having trouble updating your WorkSpaces macOS client application to a newer version, use the following procedure to update your client application.

To update the WorkSpaces macOS client application to a newer version

1. In the **Finder**, open your **Applications** folder, then open **Utilities**, and choose **Terminal**.
2. In the Terminal window, enter the following command, and then press the Return key.

```
defaults delete com.amazon.workspaces SUSkippedVersion
```

3. In the Terminal app, choose **Terminal**, **Quit Terminal**.
4. If you have not already entered a registration code in the WorkSpaces macOS client application, do so, and then choose **Amazon WorkSpaces**, **Quit Amazon WorkSpaces** to close the client application.
5. Restart the WorkSpaces macOS client application. You should be prompted to update the client. Accept the update.

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 user name and password 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.

To connect to your WorkSpace for 1.0+ and 2.0+ 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 on the menu bar, choose **Options, Manage Registrations**.
2. Enter your user name and password 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 "Remember Me" feature, you are prompted 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.

- (Optional) If you want the WorkSpaces client to remember your current registration code, select the **Remember Registration Code** check box.
- Under **Saved registration codes**, select the WorkSpace you want to name.
- In the **WorkSpace name** box, enter a name for the WorkSpace.
- (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.
- Choose **Save**.

Client views

You can switch to full screen mode by choosing **View, Enter Full Screen** (3.0+ clients) or **View, Show Fullscreen** (1.0+ and 2.0+ 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) or **View, Exit Fullscreen** (1.0+ and 2.0+ clients) in the client application menu.

You can also toggle full screen mode by pressing Control+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

- 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 .
1.0+ or 2.0+ client	In the WorkSpaces client application, open the Advanced Settings dialog box.

- Enter your desired language in the **Select a language** list and choose **Save**.
- Restart the client.

Display support

WorkSpaces Value, Standard, Performance, Power, PowerPro, and GraphicsPro 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

Graphics bundles support only a single monitor configuration with a maximum resolution of 2560x1600.

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 [WorkSpaces high DPI display support \(p. 14\)](#).

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 [WorkSpaces high DPI display support \(p. 14\)](#).


To use multiple monitors with WorkSpaces

1. Configure your local machine to use multiple monitors. For more information, see [Use multiple 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 Control+Option+Return.
2.0+ client	Choose View, Show Fullscreen . You can also toggle full screen mode by pressing Control+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 username and password 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**.

To use a proxy server for 1.0+ and 2.0+ clients

By default, the 1.0+ and 2.0+ macOS clients don't use a proxy server. To specify a proxy server, use the following procedure.

1. In the WorkSpaces client application, open the **Advanced Settings** dialog box.
2. In the **Proxy Server Setting** area, select **Use Proxy Server**, enter the proxy server URL or IP address and the port, and choose **Save**.

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 Control+Option+Return—Toggle full screen display Control+Option+F12—Disconnect session
1.0+ or 2.0+ client	Control+Option+Return—Toggle full screen display Control+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 \(p. 47\)](#) 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 **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. In the **End Session** dialog box, choose **Yes**. Your WorkSpace session ends, but the client application continues running in case you want to log in again.
- 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" \(p. 85\)](#).

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 client application.

Release	Date	Changes
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	<ul style="list-style-type: none">• Addresses a crash issue after disconnecting from PCoIP WorkSpaces• Addresses a connectivity issue with WSP WorkSpaces on M1 Mac hardware

Release	Date	Changes
		<ul style="list-style-type: none"> • Minor bug fixes and enhancements
3.1.7	April 29, 2021	<ul style="list-style-type: none"> • Improves connectivity with WorkSpaces using the WorkSpaces Streaming Protocol (WSP) • Minor bug fixes and enhancements
3.1.6	April 8, 2021	Fixes for disconnects and crashes resulting from WorkSpaces Streaming Protocol (WSP) audio traffic optimization
3.1.5	April 2, 2021	<ul style="list-style-type: none"> • Adds in-session and pre-session support for Common Access Card (CAC) and Personal Identity Verification (PIV) smart cards with WSP Windows WorkSpaces • Bidirectional video webcam support is now generally available for Windows WorkSpaces using the WorkSpaces Streaming Protocol (WSP) • Minor bug fixes and enhancements
3.1.4	March 16, 2021	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Adds support for mouse middle button dragging • Minor bug fixes and enhancements
3.1.2	January 8, 2021	<ul style="list-style-type: none"> • The WorkSpaces Streaming Protocol (WSP) is now generally available. Video-in functionality continues to be available as a beta feature on WSP WorkSpaces only • Minor bug fixes and enhancements
3.1.0	December 1, 2020	Minor bug fixes and enhancements
3.0.12	November 10, 2020	<ul style="list-style-type: none"> • Adds enhancements to the session reconnect experience • Improves error messaging during session disconnects for WorkSpaces Streaming Protocol (WSP) WorkSpaces • Fixes keyboard mapping issue with the Shift key for WSP WorkSpaces • Fixes an issue in the device-enumeration logic where video-in devices might not be shown on subsequent logins for WSP WorkSpaces
3.0.11	October 02, 2020	<ul style="list-style-type: none"> • Resolves an intermittent crash issue when disconnecting from a WorkSpaces Streaming Protocol (WSP) Workspace • Minor bug fixes and enhancements

Release	Date	Changes
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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Adds support for multiple monitors on WorkSpaces Streaming Protocol (WSP) WorkSpaces Minor bug fixes and enhancements
3.0.6	April 28, 2020	<ul style="list-style-type: none"> Adds support for toggling between high DPI and standard DPI displays Minor bug fixes and enhancements
3.0.5	March 30, 2020	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Adds support for connecting to WorkSpaces Streaming Protocol (WSP) WorkSpaces Minor bug fixes and enhancements
3.0.3	February 24, 2020	Improves readability on high DPI devices
3.0.2	February 14, 2020	<ul style="list-style-type: none"> Adds keyboard shortcut to toggle full screen display Minor bug fixes and enhancements
3.0.0	November 25, 2019	<ul style="list-style-type: none"> Improved user interface Friendly registration code labels Client-side GPU rendering Minor bug fixes and enhancements
2.5.11	November 4, 2019	<ul style="list-style-type: none"> Resolves issues with support for the macOS Catalina keyboard Minor bug fixes
2.5.9		Minor bug fixes
2.5.8		<ul style="list-style-type: none"> Resolves an intermittent crashing issue related to computer waking up when opening a laptop lid
2.5.7		<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> Resolves an issue with sub-optimal resolution with external displays in full-screen mode connected using USB-C Minor bug fixes
2.5.2		<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> 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
2.4.8		<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> 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

Release	Date	Changes
2.4.4		<ul style="list-style-type: none"> • Minor fixes • Improves copy and paste
2.4.2		Minor fixes
2.4.0		<ul style="list-style-type: none"> • New logo • Improves the user interface and stability
2.3.7		<ul style="list-style-type: none"> • Addresses a gray screen issue that occurs when displays are in different orientations • Resolves a crashing issue on macOS
2.3.6		Localization enhancements
2.3.5		Minor improvements
2.3.3		<ul style="list-style-type: none"> • Improves support for multiple monitors • Localization enhancements • Improves security and performance
2.3.1		Minor fixes
2.3.0		<ul style="list-style-type: none"> • Improves support for multiple monitors • Improves security and stability
2.2.3		Resolves minor bugs and improves stability
2.2.1		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • Adds support for the following new WorkSpace states: STOPPING and STOPPED • Resolves minor bugs and improves stability
2.0.8		<ul style="list-style-type: none"> • 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

Release	Date	Changes
2.0.4		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • Adds support for saving your credentials, enabling you to easily reconnect to your WorkSpace • Improves advanced connection health checks • Improves stability
1.0.8		<ul style="list-style-type: none"> • Introduces a full-file installation package • Improves network connectivity checks • Adds version information to the About window
1.0		Initial release

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/desktop-access>.
- 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.

WorkSpaces Windows client application

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

Contents

- [Requirements](#) (p. 59)

- [Setup and installation \(p. 59\)](#)
- [Determine your client version \(p. 61\)](#)
- [Connect to your WorkSpace \(p. 61\)](#)
- [Manage your login information \(3.0+ clients only\) \(p. 62\)](#)
- [Client views \(p. 62\)](#)
- [Client language \(p. 62\)](#)
- [Display support \(p. 63\)](#)
- [Proxy servers \(p. 64\)](#)
- [Command shortcuts \(p. 65\)](#)
- [Disconnect \(p. 65\)](#)
- [Clipboard support \(p. 66\)](#)
- [Manage hardware acceleration \(p. 66\)](#)
- [Release notes \(p. 68\)](#)

Requirements

The 4.x client requires 64-bit Microsoft Windows 8.1, Windows 10, or Windows 11.

The 3.x client requires 32-bit Microsoft Windows 7, Windows 8, or Windows 10.

Setup and installation

Download and install the WorkSpaces Windows client from [Amazon WorkSpaces Client Downloads](#).

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

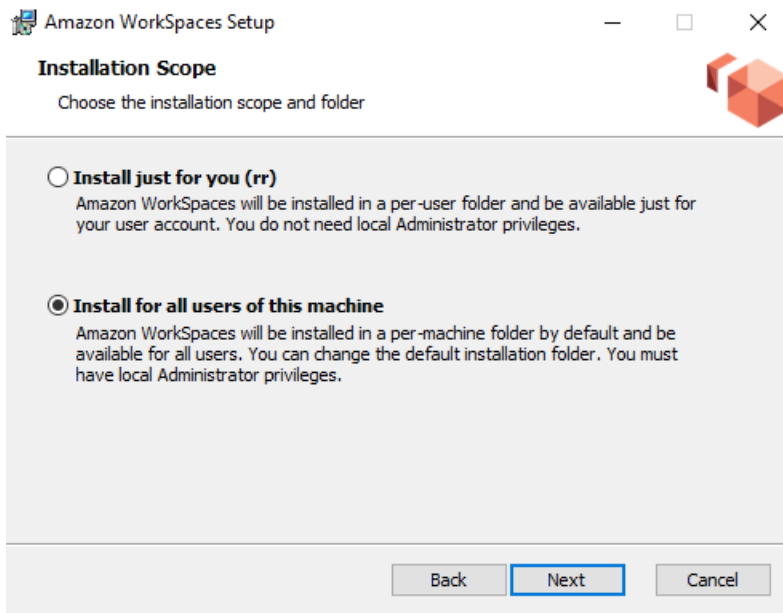
- **Install just for you.** If you choose this option and you share your local machine with other users, the WorkSpaces client application is available only to you. If other users on the machine also want to use the WorkSpaces client application, they must install the application for their own use.
-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

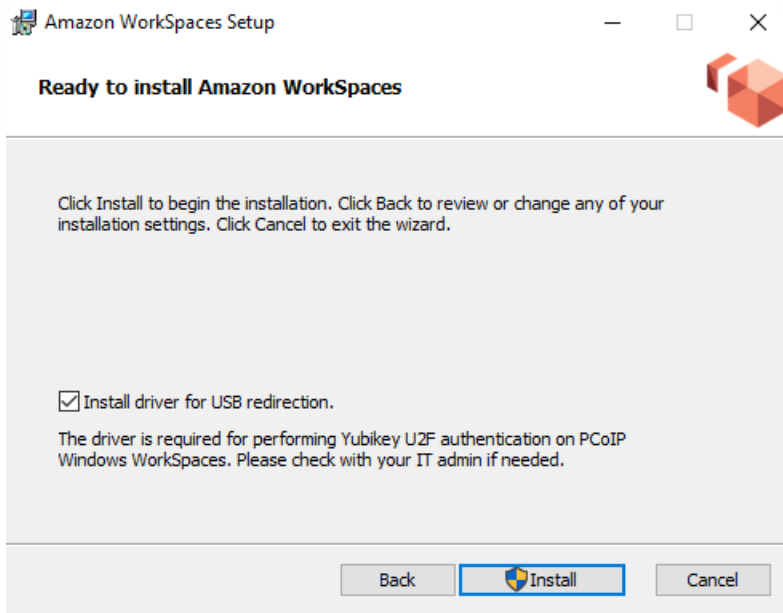
When installing the client 4.0+ version, you will have an option to install the USB redirection driver for features like USB mass storage device support. Use the following procedure to install the USB redirection driver.

To install the USB redirection driver

1. On the Amazon WorkSpaces Setup page, select **Install for all users of this machine**. Choose **Next**.



2. Select **Install driver for USB redirection** to enable the USB redirection features (the default setting is not selected). Choose **Install**. You must have administrator privileges to install the driver.



3. To install the client with PCoIP USB redirection, enter and run the following command in an elevated command prompt.

```
msiexec.exe /i "[path to msi]" /qn INSTALL_USB="1" ALLUSERS="1"
```

To install the client without PCoIP USB redirection, enter and run the following command in an elevated command prompt.

```
msiexec.exe /i "[path to msi]" /qn ALLUSERS="1"
```

If you're having trouble updating your WorkSpaces Windows client application to a newer version, use the following procedure to update your client application.

To update the WorkSpaces Windows client application to a newer version

1. On your local machine, open the Windows search box and enter **registry editor** to open the Registry Editor (**regedit.exe**).
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:
Computer\HKEY_CURRENT_USER\Software\Amazon Web Services. LLC\Amazon WorkSpaces\WinSparkle
4. Delete the **SkipThisVersion** registry key. When prompted to confirm the deletion, choose **Yes**, and then close the Registry Editor.
5. If you have not already entered a registration code in the WorkSpaces Windows client application, do so, and then choose **Amazon WorkSpaces, Quit Amazon WorkSpaces** to close the client application.
6. Restart the WorkSpaces Windows client application. You should be prompted to update the client. Accept the update.

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 user name and password 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.

To connect to your Workspace for 1.0+ and 2.0+ 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 on the menu bar, choose **Options, Manage Registrations**.

2. Enter your user name and password 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 "Remember Me" feature, you are prompted 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) or **View, Show Fullscreen** (1.0+ and 2.0+ 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) or **View, Exit Fullscreen** (1.0+ and 2.0+ 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 .
1.0+ or 2.0+ client	In the WorkSpaces client application, open the Advanced Settings dialog box.

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

Display support

WorkSpaces Value, Standard, Performance, Power, PowerPro, and GraphicsPro 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

Graphics bundles support only a single monitor configuration with a maximum resolution of 2560x1600.

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 [WorkSpaces high DPI display support \(p. 14\)](#).

To use multiple monitors with WorkSpaces

Note

Multiple monitors aren't currently supported on Linux WorkSpaces using the WorkSpaces Streaming Protocol (WSP).

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.
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 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.

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 username and password 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.

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**.

To use a proxy server for 1.0+ and 2.0+ clients

By default, the 1.0+ and 2.0+ Windows clients don't use a proxy server. To specify a proxy server, use the following procedure.

1. In the WorkSpaces client application, open the **Advanced Settings** dialog box.
2. In the **Proxy Server Setting** area, select **Use Proxy Server**, enter the proxy server URL or IP address and the port, and 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 **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 **End Session** dialog box, choose **Yes**. Your Workspace session ends, but the client application continues running in case you want to log in again.
- 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" \(p. 85\)](#).

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 3.1.4, hardware acceleration is disabled by default when you're using the Amazon WorkSpaces Windows client application.

Note

If you plan to upgrade to version 3.1.4, and if you've disabled hardware acceleration for version 3.1.3 or earlier by using the [procedure described later in this section \(p. 68\)](#), make sure that you re-enable hardware acceleration in Windows by setting the **DisableHWAceeleration** registry key to 0. Then you can upgrade to version 3.1.4 or later of the WorkSpaces Windows client application.

We recommend that you leave hardware acceleration disabled in the Windows client. However, 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 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 **DisableHWAacceleration** 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 **DisableHWAacceleration** 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 **DisableHWAacceleration**.
 - c. Select the new **DisableHWAacceleration** 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 **DisableHWAacceleration** key to **0**.

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.

Release	Date	Changes
4.0.3	October 4, 2021	<ul style="list-style-type: none"> • Resolves crashes due to double-byte user names (e.g. Japanese) on local machines • Resolves mouse-scrolling issues on 64-bit Windows 8.1 • Bug fixes and enhancements
4.0.2	September 1, 2021	<ul style="list-style-type: none"> • Minor bug fixes and enhancements <p>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</p>

Release	Date	Changes
		(v3.x) from the Amazon WorkSpaces Client Download page.
4.0.1	July 30, 2021	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • Improves connectivity with WorkSpaces using the WorkSpaces Streaming Protocol (WSP) • 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 WorkSpaces Streaming Protocol (WSP) audio traffic optimization
3.1.5	April 2, 2021	<ul style="list-style-type: none"> • Adds Settings UI to enable/disable hardware acceleration • Bidirectional video webcam support is now generally available for Windows WorkSpaces using the WorkSpaces Streaming Protocol (WSP) • Minor bug fixes and enhancements
3.1.4	March 16, 2021	<ul style="list-style-type: none"> • 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

Release	Date	Changes
3.1.3	February 15, 2021	<ul style="list-style-type: none"> Fixes issue with double Shift key presses not working in some apps Improves settings UI for proxy configurations Minor bug fixes and enhancements
3.1.2	January 8, 2021	<ul style="list-style-type: none"> The WorkSpaces Streaming Protocol (WSP) is now generally available. Video-in functionality continues to be available as a beta feature on WSP 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
3.1.1	December 1, 2020	<ul style="list-style-type: none"> Adds support for smart card authentication in the Amazon GovCloud (US-West) Region Minor bug fixes and enhancements <p>Note Version 3.1.1 is available only in the Amazon GovCloud (US-West) Region.</p>
3.1.0	December 1, 2020	<ul style="list-style-type: none"> Resolves intermittent flickering issue inside of an active WorkSpaces session Minor bug fixes and enhancements
3.0.12	November 10, 2020	<ul style="list-style-type: none"> 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 WorkSpaces Streaming Protocol (WSP) WorkSpaces Fixes keyboard mapping issue with the Shift key for WSP WorkSpaces
3.0.11	October 02, 2020	<ul style="list-style-type: none"> Resolves an issue with enumeration of video-in devices on WorkSpaces Streaming Protocol (WSP) WorkSpaces Resolves an intermittent crash issue when disconnecting from a WSP WorkSpace Minor bug fixes and enhancements

Release	Date	Changes
3.0.10	September 16, 2020	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Adds monochrome cursor support on WorkSpaces Streaming Protocol (WSP) 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	<ul style="list-style-type: none"> Adds support for multiple monitors on WorkSpaces Streaming Protocol (WSP) WorkSpaces Minor bug fixes and enhancements
3.0.6	April 28, 2020	<ul style="list-style-type: none"> 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
3.0.4	March 3, 2020	Minor bug fixes and enhancements
3.0.2	February 14, 2020	<ul style="list-style-type: none"> Adds keyboard shortcut to toggle full screen display Adds support for connecting to WorkSpaces Streaming Protocol (WSP) WorkSpaces Minor bug fixes and enhancements
3.0.0	November 25, 2019	<ul style="list-style-type: none"> Improved user interface Friendly registration code labels Minor bug fixes and enhancements
2.5.11	November 4, 2019	Minor bug fixes
2.5.10		<ul style="list-style-type: none"> Resolves an intermittent issue related to invalid keystrokes sent when closing a laptop lid Minor fixes

Release	Date	Changes
2.5.9		<ul style="list-style-type: none"> Resolves the issue of displaying a blank app icon image on the Windows 10 taskbar 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		<ul style="list-style-type: none"> 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
2.5.5		Minor fixes
2.5.2		<ul style="list-style-type: none"> Resolves an intermittent issue with the Caps Lock key becoming stuck Minor bug fixes
2.5.1		<ul style="list-style-type: none"> 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		<ul style="list-style-type: none"> Adds support for uniform resource identifiers (URIs), which enable login orchestration Minor fixes
2.4.7		<ul style="list-style-type: none"> 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/Indianapolis America/Indiana/Marengo America/Indiana/Vevay America/Indiana/Indianapolis Includes user interface text changes for the Login page
2.4.6		<ul style="list-style-type: none"> Adds support for configuring the logging level to include advanced logging for debug scenarios Minor improvements to session provision handling

Release	Date	Changes
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		<ul style="list-style-type: none"> • Minor fixes • Improves copy and paste
2.4.2		Minor fixes
2.4.0		<ul style="list-style-type: none"> • 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
2.3.3		<ul style="list-style-type: none"> • 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		<ul style="list-style-type: none"> • Improves support for multiple monitors • Improves security and stability
2.2.3		Resolves minor bugs and improves stability
2.2.1		<ul style="list-style-type: none"> • 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

Release	Date	Changes
2.1.0		<ul style="list-style-type: none">• Adds support for the following new Workspace states: STOPPING and STOPPED• Resolves minor bugs and improves stability
2.0.8		<ul style="list-style-type: none">• 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		<ul style="list-style-type: none">• 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
1.1.80		<ul style="list-style-type: none">• 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		<ul style="list-style-type: none">• 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		<ul style="list-style-type: none">• Adds support for saving your credentials, enabling you to easily reconnect to your WorkSpace• Improves advanced connection-health checks• Improves stability
1.0.8		<ul style="list-style-type: none">• Introduces a full-file installation package• Improves network connectivity checks• Adds version information to the About window
1.0		Initial release

Print from a WorkSpace

The following printing methods are supported by Amazon WorkSpaces.

Note

- The WorkSpaces clients for iPad, Android, Web Access, and Linux support network printing and cloud printing services. Local printing is not currently supported for the iPad, Android, 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 \(p. 76\)](#)
- [Other printing methods \(p. 77\)](#)

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 \(p. 6\)](#) 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 [Amazon 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.
- Use a cloud printing service, such as [HP Mobile Printing](#).
- Print to a file, transfer the file to your local desktop (such as by emailing the file or by using [Amazon WorkDocs \(p. 3\)](#)), 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 \(p. 79\)](#)
- [The Amazon WorkSpaces Application Manager client application isn't appearing on my Windows WorkSpace desktop \(p. 79\)](#)
- [I don't see any applications listed in the Amazon WorkSpaces Application Manager client application \(p. 79\)](#)
- [After logging in, the Windows client application displays only a white page and I cannot connect to my WorkSpace \(p. 79\)](#)
- [My WorkSpaces client gives me a network error, but I am able to use other network-enabled apps on my device \(p. 80\)](#)
- [It sometimes takes several minutes to log in to my Windows WorkSpace \(p. 80\)](#)
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- [My screen is flickering or not updating properly, or my mouse isn't clicking in the right place \(p. 85\)](#)

I didn't receive an email with my Amazon WorkSpaces registration code

Contact your WorkSpaces administrator for assistance.

The Amazon WorkSpaces Application Manager client application isn't appearing on my Windows WorkSpace desktop

The **Amazon WAM** shortcut should be installed on the Windows WorkSpaces client desktop. If the shortcut isn't on the client desktop, see [Troubleshooting Amazon WAM Issues](#) in the *Amazon WAM User Guide*.

I don't see any applications listed in the Amazon WorkSpaces Application Manager client application

Choose **MY APPS** to see the applications that your admin has specified to install by default on your WorkSpace. Choose **DISCOVER** to see the applications that your admin has made available for you to install.

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 Amazon 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 [Amazon WorkSpaces Client Downloads](#). 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 \(p. 64\)](#).
- **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 \(p. 50\)](#).
- **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 \(p. 44\)](#).

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):

- [Restart your WorkSpace \(p. 6\)](#)
- [Rebuild your WorkSpace \(p. 8\)](#)

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.

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 \(p. 8\)](#) 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 Amazon Region that your WorkSpace resides in. For the best WorkSpace experience, you should be within 2,000 miles of the Amazon 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 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 \(p. 61\)](#).

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 \(p. 47\)](#).

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**  button.
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 WorkSpaces Streaming Protocol (WSP).

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 [Amazon WorkSpaces language and keyboard support \(p. 20\)](#).

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 [Amazon WorkSpaces Client Downloads](#).

For more information about installing or updating the macOS client, see [Setup and installation \(p. 47\)](#).

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 \(p. 51\)](#) 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 [WorkSpaces high DPI display support \(p. 14\)](#).

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.

Note

Clipboard redirection isn't supported in the WorkSpaces Linux client application.

- 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 Cloud Access Software 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 \(p. 66\)](#).

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 \(p. 68\)](#). Disabling hardware acceleration in Windows might affect the performance of other Windows applications.