solstice

introduction

The Solstice User Guide provides a summary of how Solstice works for users, including an overview of a Solstice system and steps for users to connect, share and control content on a Solstice wireless display using laptops, mobile devices and the display user interface. Solstice is compatible with virtually any display and improves meeting room efficiency, engagement, and productivity.

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key terms

Solstice Wireless Display
Any flat panel or projector display connected via a video cable to a Solstice Pod or Solstice Display Software host PC, allowing users to connect and share content wirelessly to the display.

Solstice Pod
Compute console running an integrated version of the Solstice collaboration software that connects to the display by HDMI video cable.

Solstice Display Software for Windows
Solstice Display Software application installed on the Windows 7, 8 or 10 host PC connected to the display by video cable.

Solstice User App
Software app installed on user laptops and mobile devices used to connect to and share content on the Solstice wireless display.

Posts
The individual pieces of media/content published to the Solstice wireless display.

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solstice room overview

A diagram of a typical Solstice-enabled conference room setup is shown below.

The requirements for an operational system are straightforward. The display is connected via HDMI video cable to a Solstice Pod or Solstice Windows host PC. The Solstice host is attached to the WiFi/Ethernet network participants will user to connect and share to the display. Then, users on the network can follow on-screen instructions to get the Solstice app and connect to the display.

There are two components of a Solstice system that work in tandem to enable collaboration:

- **Solstice Host** — i.e. Solstice Pod or Solstice Display Software installed on a Windows PC – that is connected to a room display by video cable. Both Solstice hosts are available for purchase from Mersive or one of its authorized resellers. For more information on licensing, refer to the licensing of the Pod Guide or Windows Software Guide.
Note: Solstice Display Software for Windows is not supported in a virtual machine (VM) environment or while using terminal services.

- **Solstice user apps** are installed on Windows, Mac OS, Android, and iOS devices – including laptops, tablets and phones – that you want to use to connect and share media to the Solstice display. Solstice user apps are free and can be downloaded here. Alternatively, Solstice user apps can also be accessed by following instructions on the Solstice display welcome screen. By entering the IP address visible on the Solstice display into a web browser on the user device, the user app can be downloaded directly; or iOS and Android users will be redirected to the appropriate app marketplace. All laptops and mobile devices need to be connected to the same network as the Solstice host/display. Android and iOS devices will require Internet access to download the app, but Windows and OSX users may download the app directly from the host. Once installed, the app will remain on the device for future use and will not need to be downloaded/installed again. Solstice is designed to be a true BYOD solution, but installing user apps on devices that meet the minimum system requirements below will provide the best user experience.

Clients – Laptops and Mobile Devices			
	Laptops & Tablet PCs	**iPads, iPhones, & iPods**	**Android Tablets & Phones**
Operating System	Windows XP, 7, 8, or 10 OSX 10.7 or higher	iOS version 7.0 or later	Jellybean OS (4.2) or later
Minimum Required	Intel Core 2 Duo 2.3Ghz 2 GB RAM	iPad 3 or later iPhone 5 or later	Phones/Tablets supporting 4.2 or later
Recommended	Intel Core i7 2.3Ghz 6 GB RAM	iPad/iPhone 5 or later with Retina display	Phones/Tablets supporting Android 5.0 or later

Solstice user apps for Windows and Mac laptops can also be run from a USB dongle, with no installation and no dependencies or libraries required on the user's laptop.

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the solstice display menu

The Solstice Display Menu lets in-room users manually bring the display out of moderated mode, lock the display, or disconnect all users. To access the Solstice Display Menu when Solstice is running click the Solstice icon in the bottom right corner of the display (using a USB mouse or via a supported touch screen). Menu options include 'Access Control', 'Lock', 'Disconnect All Users', and 'System'.
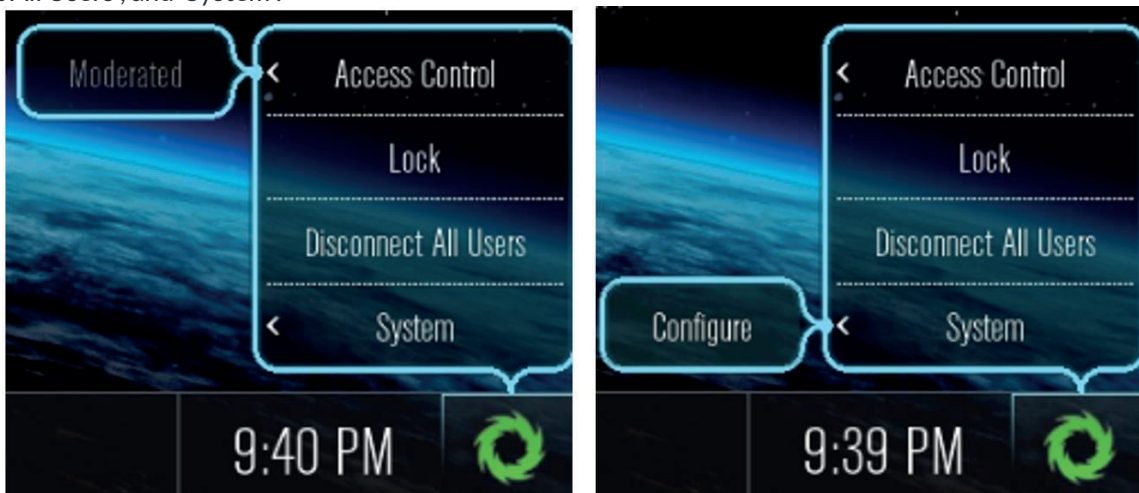
Access Control allows a user with access to the configuration panel to manually remove the display from moderated mode. The display may be put into moderated mode through the Solstice client. This control can be used to manually override moderation in the case that the user with moderator control left the room without closing Solstice and forgot to release the display.

Lock disables access to the display by any new users for the remainder of the session. Only users already connected to the display can share media.

**Disconnect all Users** disconnects all users from the session and removes all shared content.

System>Configure provides local access to the Configuration Panel. This is used by admins to configure settings such as appearance and network. For more detail on these settings, please see the configuration section of the Pod Guide or Windows Software Guide.

connecting to the solstice display from user devices

End users can connect to a Solstice display using laptops, tablets, and smartphones that are on the same network as the Solstice host. First time users that have not previously installed the Solstice user software app can open a browser on their device and enter the IP address visible on the Solstice display. If configured in the Solstice Dashboard, the welcome screen will also display room schedule/availability information based on a Microsoft Exchange or Office365 calendar.
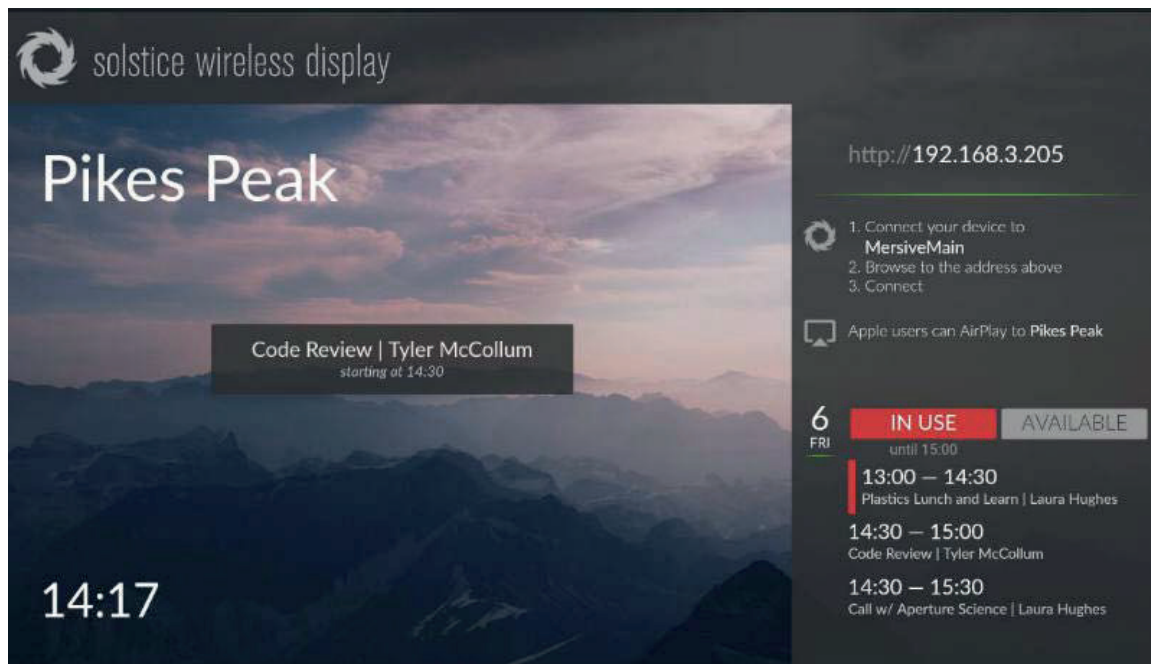
Clicking 'Get the App & Connect' will download the user application, or it will redirect iOS users to the App Store and Android users to the Google Play store to download the user software. Once downloaded, launch/install the Solstice user app.
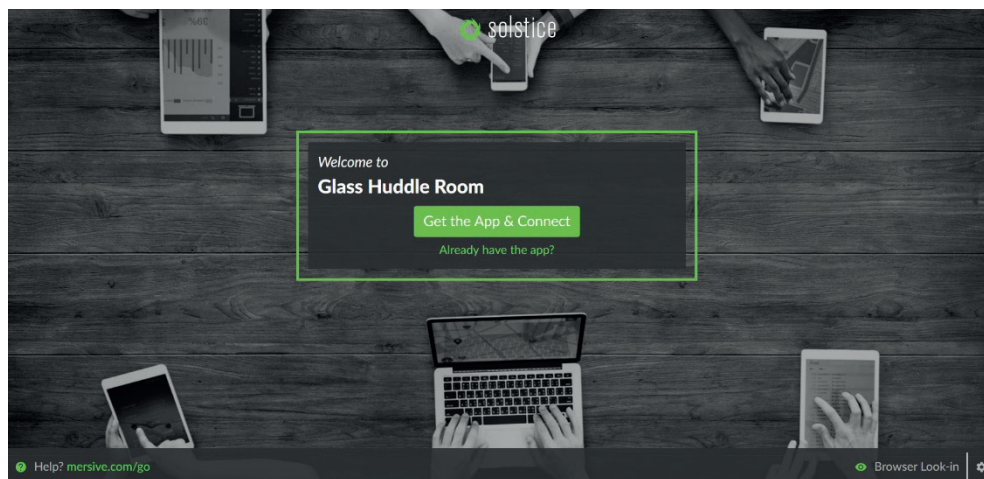

Once installed, the app will remain installed on the user's user device and does not need to be re-downloaded for future use. Simply launch the app from the device rather than re-downloading the app from the browser page. Once downloaded, the app will automatically launch at startup of the device. The default launch-at-startup option can easily be disabled in the user settings menu.

The Solstice user apps features support for English, Japanese, German, Spanish, French, Italian, and Traditional Chinese languages. The user app language is set automatically based on the language that the user device's operating system is set to. The app will default to English for user devices set to an unsupported language.

Once Solstice user software is open, the user will see the Solstice user discovery panel with discovery and connection options. If discovery is enabled, a list of displays will appear and users can simply click to connect to a display. If a room schedule is associated with a display, availability information will show next to the display, as next to 'Orange Lounge' below. If the list of available displays is long, users have two options to find the right display for connection. They can search for a specific display by name (visible on the display) by clicking the search icon along the top of the app user interface, or they select the 'Tags' button just below the search field to filter the list of display by one or more discovery tags.

Discovery tags denote logical groups of displays – such as all the display that fall in a specific location, department, or type of room – allowing users to filter by those groups in order to connect. Discovery tags are supported on Solstice Enterprise Edition displays and are managed via the Solstice Dashboard.
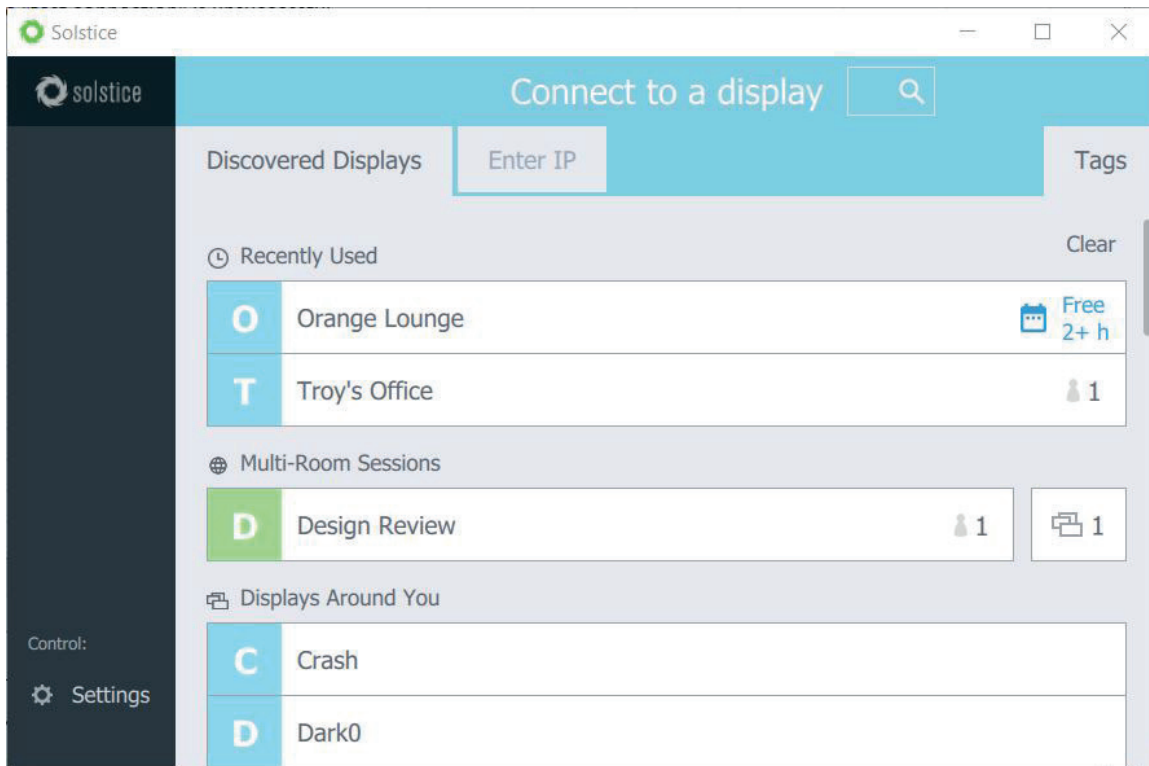
The one other element visible on the user app discovery panel is a settings button with a gear icon in the lower left corner of the user interface. Settings options include the ability to designate the user/device name, adjust notification settings, designate whether desktop audio should be shared automatically or not, check for user software updates automatically or not, and input the Solstice Discovery Service IP address if required.

If the Access Control setting does not have a Screen Key enabled when the user connects to a display, the user app will automatically join the session with full posting and control rights. If the Access Control setting is set to Screen Key, the user will have to enter the Screen Key (visible on the Solstice display) to access the session. As of Solstice 3.1, the display will detect when a user is initiating a connection and the screen key will enlarge to help users find it.
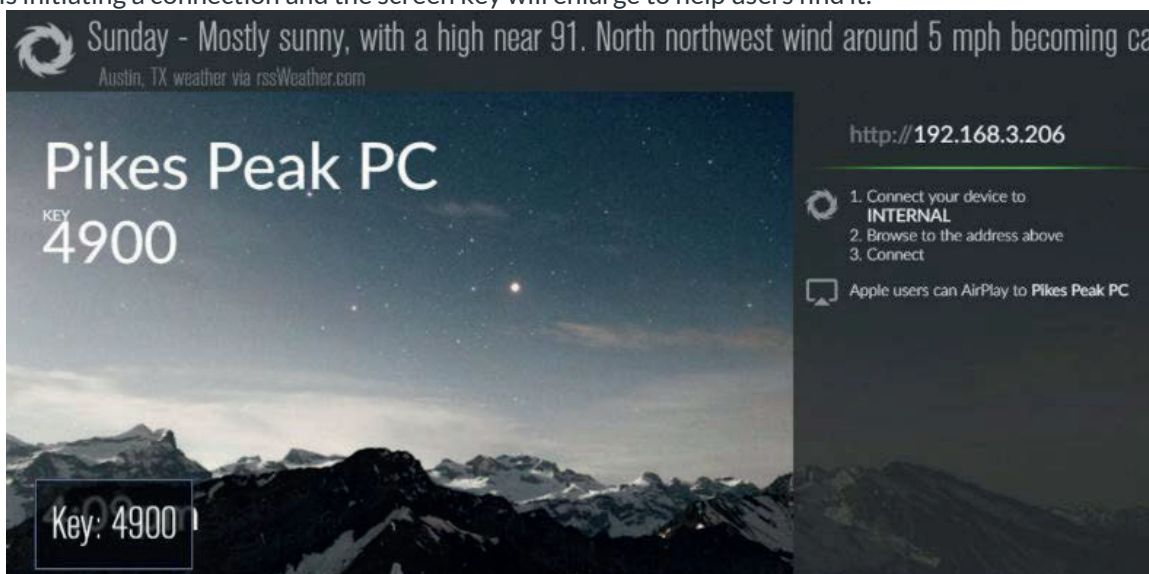
If moderation mode is already enabled by another user, any future collaborators will request to join and wait for a session Moderator to approve the request. If the session is set to Lock, no new users will be able to join.

Once connected to a Solstice display, there are two types of sessions with unique sharing and control rights for users. Full Collaboration sessions provide all members of the session with equal rights to share and control the display. These include sessions with Access Control set to enable or disable the Screen Key. For these sessions, any user that attains access to the session has equal sharing and control rights. Moderated sessions – configurable from the Solstice app if enabled in Dashboard – allow one or more moderator users to lead the session by controlling what is published to the display and the layout of posts. In these sessions, non-moderator users can request to join as guests with restricted sharing and control rights and may be promoted to a moderator by any moderator already in the session.

using solstice for collaboration sessions

Solstice supports a broad range of use modes, from egalitarian collaboration among any number of users to moderated sessions. In this section, we'll provide an overview of using Solstice for full egalitarian collaboration, covering first the user apps followed by the Solstice display interface. For information about how Solstice is used for moderated sessions led by one or multiple host users, see Using Solstice for Moderated Sessions below.

solstice user app during full collaboration sessions

When users launch the Solstice app and connect to a display, they will see the sharing panel with the available sharing options, as well as the user's session information and additional navigation options in the left side navigation menu.
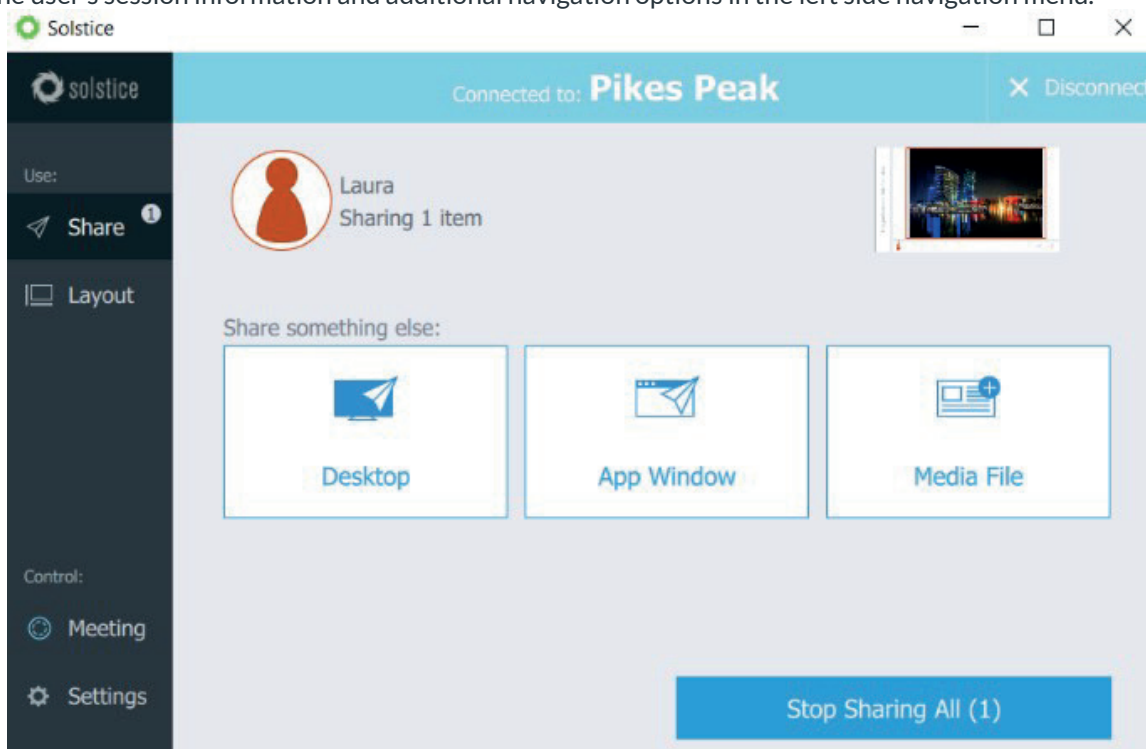
The sharing panel provides the user options for sharing different types of posts to the display. Not all sharing options are available on all devices. The sharing options available for Windows and Mac laptops include:

- **Desktop with Audio //** stream the desktop view of the Windows or Mac laptop, with optional desktop audio, to the display.
- **App Window //** stream a single application window open on the Windows or Mac laptop.
- **Media File //** access and share media, including images and videos, from the device.

The Solstice display will automatically enter full screen mode when only one source is shared. The sharing options users see can be enabled/disabled individually in the Configuration Panel or remotely using the Solstice Dashboard.

When app windows or desktop views are shared to the display in the room, the posts are not static images; they are live feeds from the user device(s). Any changes visible on desktop or app window that is shared to the Solstice display will be visible on the shared Solstice display in real-time. However, the shared document/data never leaves the original device – only the desktop/app-window view is shared to the display. Thus, the security of shared documents and data is never compromised or at-risk.

The user app interface includes a 'Disconnect' button to disconnect from the Solstice display/session, as well as the navigation menu with options for toggling between the sharing panel and the control panel. 'Settings' and 'Meeting' options appear as well.

Selecting 'Disconnect' will disconnect the user from the Solstice session. Toggling to the control panel replaces the sharing panel with a what-you-see-is-what-you-get (WYSIWYG) interface with options for controlling the media on display. See Managing Media Posts on the Solstice Display for more details about the control panel. The 'Settings' options are the same as those from the Solstice user connect screen. If enabled in Dashboard, the 'Look-In' option will appear as a tab under 'Meeting'. Look-In gives the user a way to view the display from their web browser, including 'native' resolution, 'full screen', or 'fit to window' views. The Look-In view is not instantaneous – it updates about every 5 seconds.

The user software control panel enables users to control media on the display in various ways. To access the control panel from the share panel, toggle to the 'Layout' option in the left side menu. To go back to the share panel, toggle back to the 'Share' option.

From the layout panel, media items can be rearranged, moved on/off screen, and deleted. The layout can also be changed to/from grid and freeform modes. In freeform mode, media can be scaled and rearranged arbitrarily to create custom layouts to meet the needs of the unique session. Media control/management features of the control panel are covered in detail in Managing Media Posts on the Solstice Display.
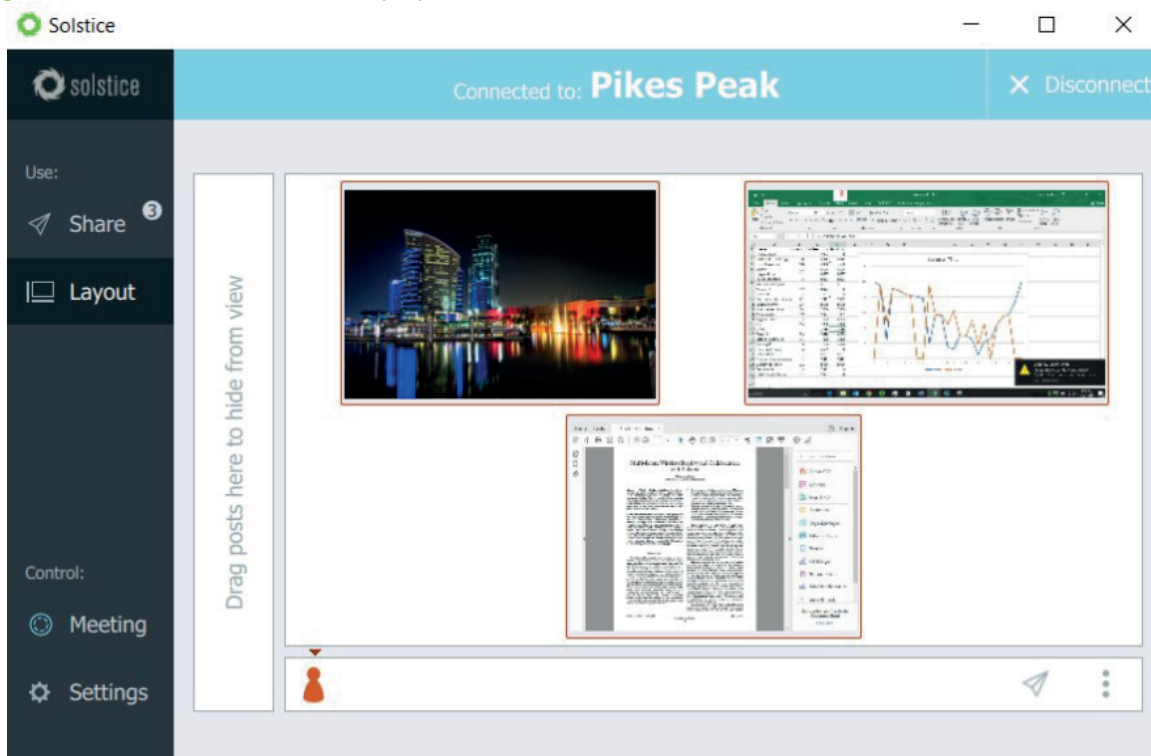

Users can also share new media items from the control panel, similar to sharing from the share panel. To share an item from the control panel, click the share icon button in the lower right area of the user interface and select the type of item you would

like to share.

solstice display-side interface during full collaboration sessions

Solstice supports display-side interaction via a mouse connected to the Pod or host PC, and via most multi-touch displays. Display-side interaction enables the Solstice display-side user to share (Solstice Display Software for Windows only) and control content on the display, using the Solstice host as a participant in the Solstice session.
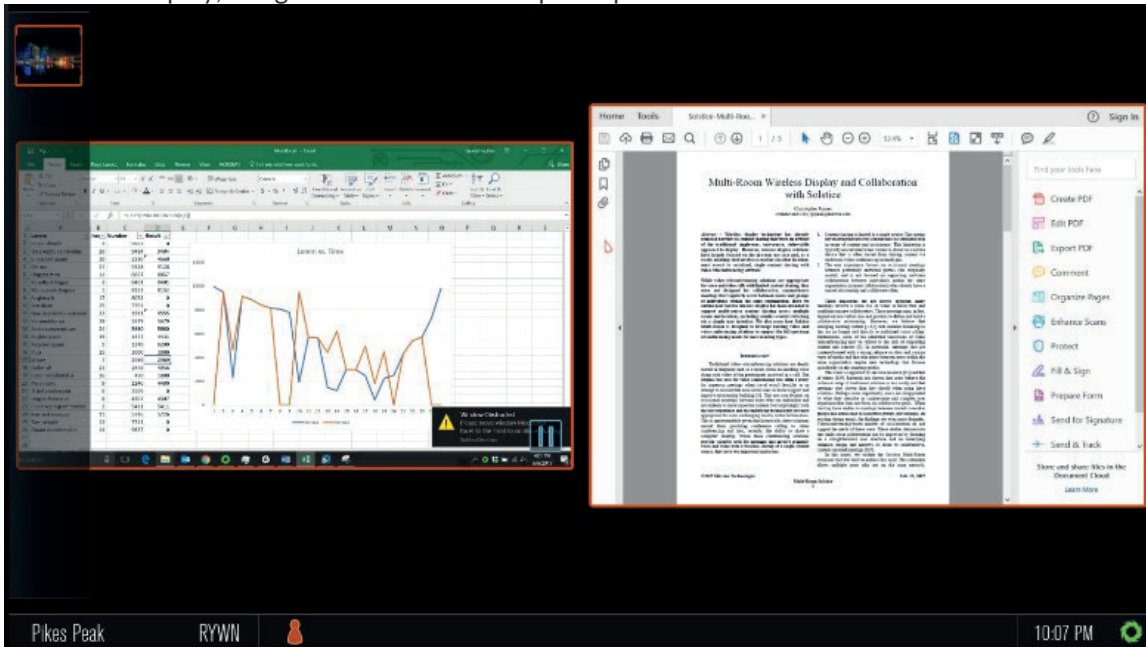

- **Display Name/IP //** The display name and/or IP address appear(s) in the lower left corner of the Solstice display. The display name can be changed and preferences for display discovery can be set in the Solstice Configuration Panel. See the configuration sections of the Pod Guide or Windows Software Guide for more.
- **Screen Key //** Visible only when the Access Control for the session is set to Screen Key, this alphanumeric key appears in the lower left section of the display to ensure only those in the room with a view of the display can connect to the session to share and control the display.
- **Meeple //** Meeple are graphical indicators of session participants located along the bottom of the Solstice display interface.
- **Meeple Menu //** The Meeple Menu, accessed by left clicking on any Meeple icon, provides the display host user access with per-user control over individual users of the session, including options to boot user; show, hide, stack, and delete a user's posts; and get session info about the user.
- **Solstice Display Menu //** This menu, accessed by left clicking the Solstice icon in the lower right corner of the display, provides the display host user control over the session from the display user interface.
- **On Screen Area //** This is the large interactive area with the active posts in view on the Solstice display.
- **On-Deck Panel //** This is the smaller interactive area along the left side of the Solstice display that shows media posts not currently in view on the shared display. Media posts in this area are 'on-deck'. The on-deck panel will be empty until a post is moved from the display onto the panel. The on-deck panel will auto-hide after a short period of inactivity. To access the on-deck panel when hidden, simply mouse over or touch the left border of the Solstice display.

In addition to the display interface controls covered in the section, the display-side user can also control media content on the display using a mouse or touch-enabled display. Media items can be rearranged, moved on/off screen, and deleted. The display layout can also be changed to/from grid and freeform modes. Media control/management features are covered in detail in the Managing Media Posts on the Solstice Display section.

# using solstice for moderated sessions

A user may dynamically set a meeting to 'moderated' in the Meeting menu of the user app (unless moderation is disabled for the Solstice host).
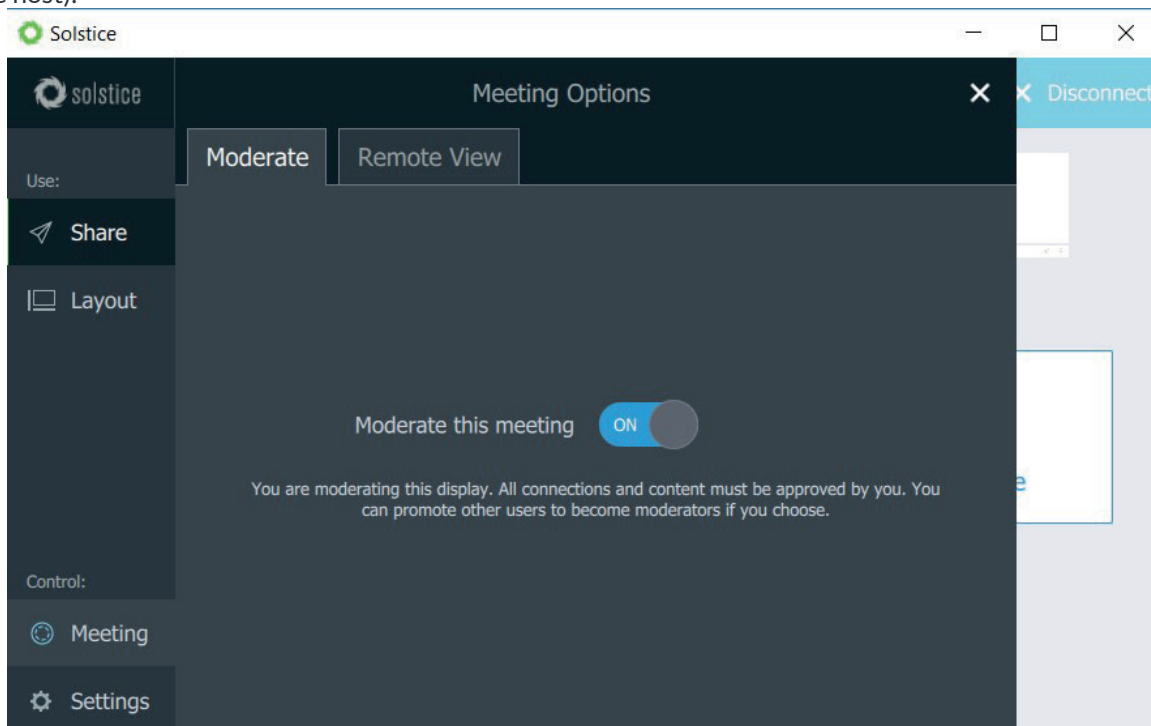

When a user sets a session to Moderated, future users must be approved by a moderator to join the session and each may be approved as a guest or as a moderator. Any session moderator will have the ability to approve or reject guest requests to join the session and to post media. These requests will appear as alerts next to the Meeple icon(s) along the bottom of the Solstice display interface and in the navigation menu of moderator's app.
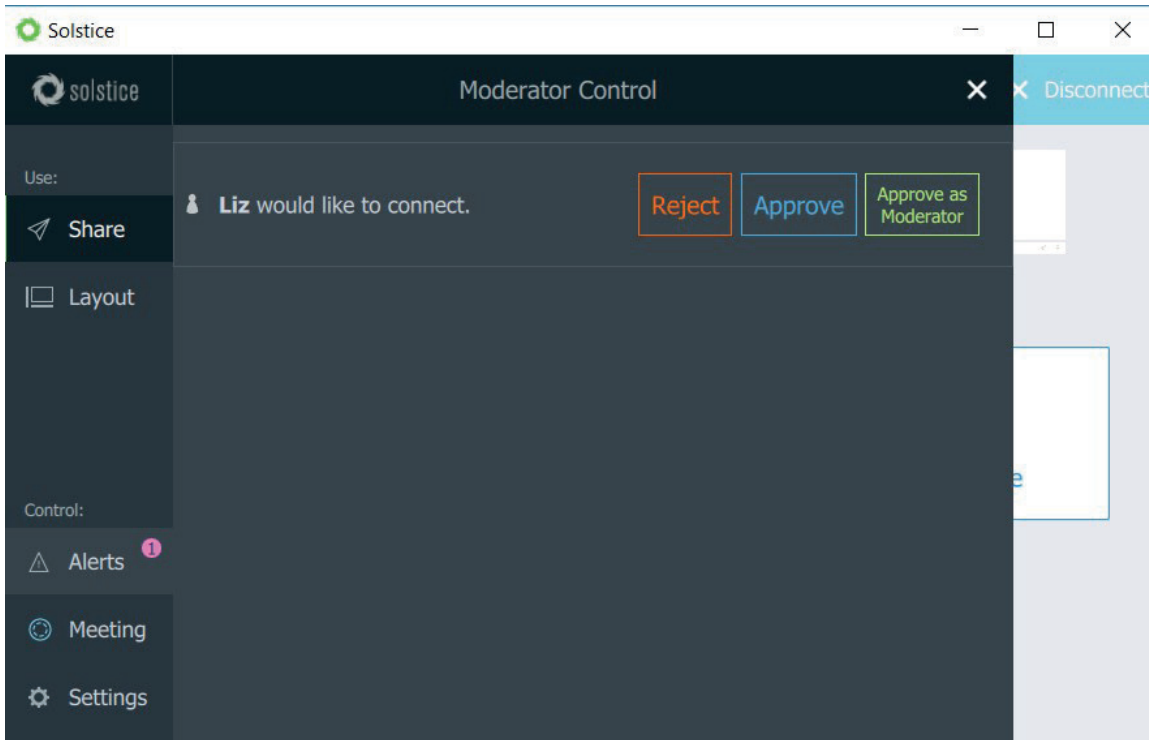
Joining the session and posting media as a guest requires approval from a moderator of the session. Guests do not have the ability to control layouts or edit/remove posts.

There are a few changes in the Solstice app interface during Moderated Sessions:

- **Alerts //** visible only to moderator users, the numeric indicator(s) – that appear in the navigation menu of Solstice apps – representing guest users' requests to join the session and post media.
- **Meeple Group //** a graphical indicator in the lower left corner of the control panel representing the guest users that have joined a moderated session but are not actively sharing any media posts to the display.
- **Moderator Meeple //** session moderators are indicated by the addition of a line below the Meeple graphical indicator on the Solstice display interface and a small dot in the Solstice app interface.
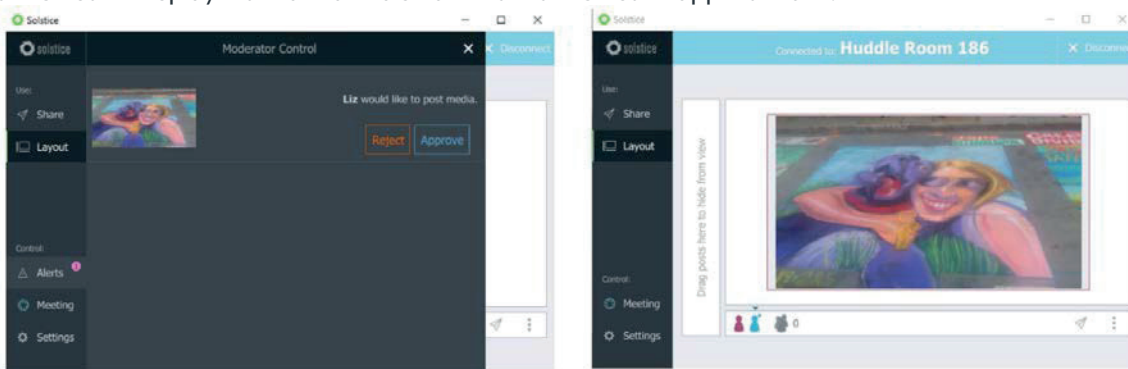
using solstice for multi-room sessions

Solstice Multi-Room enables meeting participants to share content collaboratively across multiple locations and geographies on the same enterprise network. When two or more Solstice Enterprise Edition Pods are synced in a Multi-Room session,

shared content will appear on all Solstice displays in the session regardless of which room/location shared the content. For more information, see the Multi-Room User Guide.

managing media posts on the solstice display

With Solstice, users can not only share media to the display, they also have a large amount of control over the media shared, regardless which user shared it (unless the session Access Control is set to Moderated, in which case only moderator users can control shared media). Further, media and the display layout can be controlled by users on their client devices or display-side by the display host user.

placement and layout

There are two layout modes that can be designated by accessing the 'Media Placement' menu: align to grid (default) and freeform. To access the menu from Solstice user apps, click the alignment icon in the bottom right corner of the control panel. To access the menu from the Solstice display interface, right click any part of the display 'On Screen Area' that isn't covered by a media post.
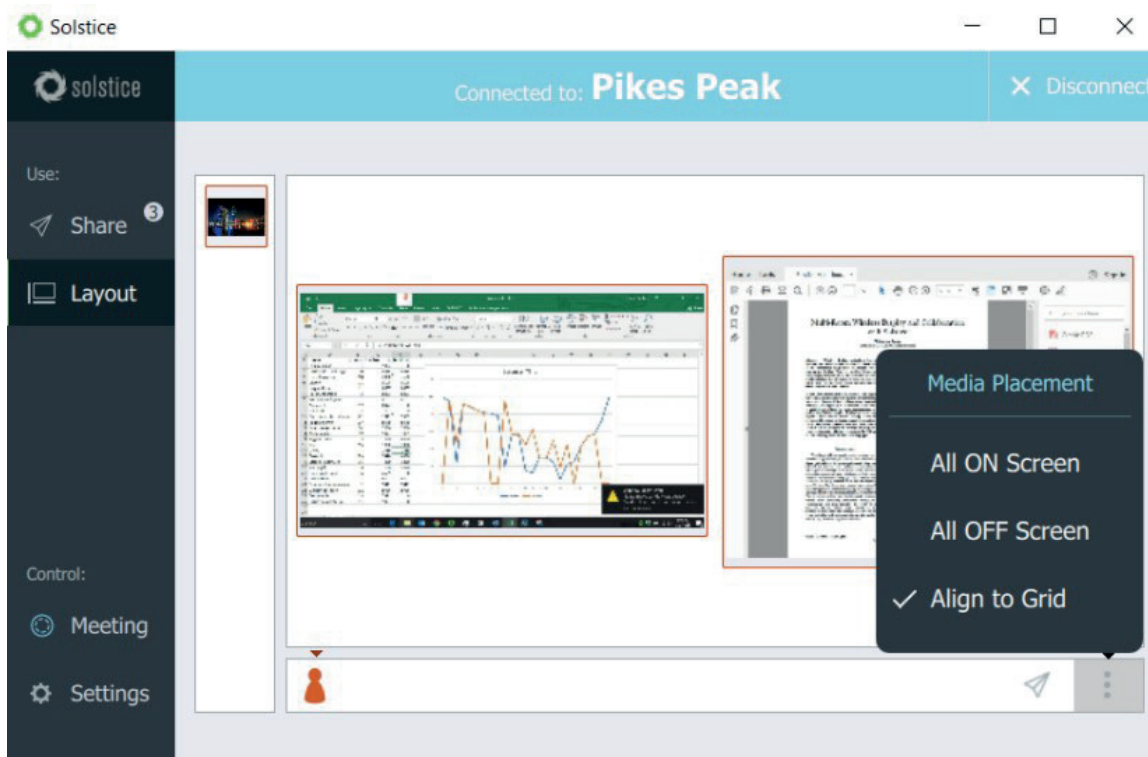
From the menu, users can select 'All ON Screen', 'All OFF Screen', and enable/disable 'Align to Grid'. Additional controls include the ability to drag and drop posts individually between the on deck panel and the on screen area, as well as rearrange posts individually within the on screen area by clicking, holding, and dragging. When 'Align to Grid' is disabled/deselected, posts can also be scaled arbitrarily. Pinch to zoom on touch-enabled devices, or use the mouse wheel to scale media in and out. All of these controls are available for app users and display-side users. The basic layout control options are outlined below.

media actions

There are specific actions available for each media post which are accessible by right-clicking (on Windows and Mac user apps) or tapping-and-holding (for mobile/touch devices) on the media post:
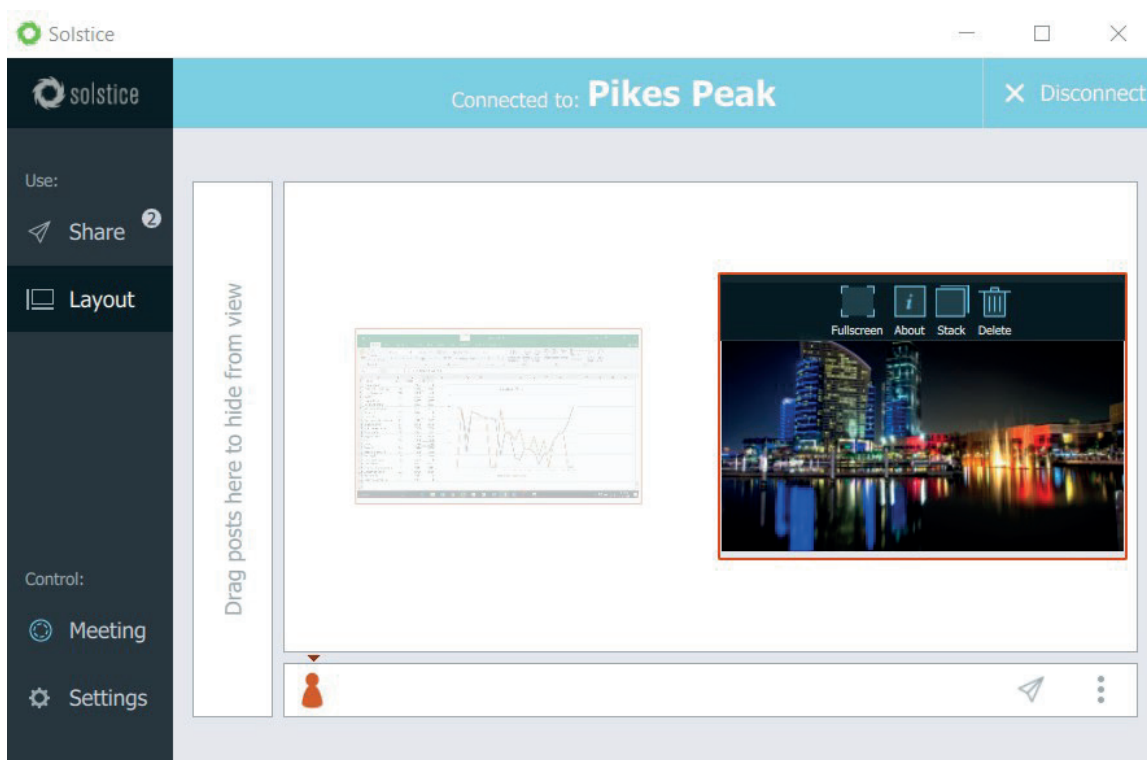
- **Fullscreen** publishes the media post to a full screen view and moves all other posts in the on screen area to the on deck panel.
- **About** toggles to a view of the media item on the display that provides information about the post and the user.
- **Stack** enables the user to organize multiple media items into a single post on the display. Items can then be flipped through within the position of the single post.
- **Delete** removes the media post from the session completely.

stack actions

When multiple posts are compiled into a stack on the display – indicated by a small number in the top right corner of the post – there are specific actions available which are accessed by right-clicking or tapping-and-holding (touch controls) on the stack:

- **Fullscreen** publishes the media stack to a full screen view and moves all other media posts in the on screen area to the on deck panel.
- **About** toggles to a view of the stack on the display that provides information about the stack and user.
- **Delete All** removes all media posts within the stack from the session completely.
- **Unstack** makes each component piece of media in the stack its own post on the display.
- **Edit Stack** enables the user to add and remove media posts from the stack.

video posts on solstice

Solstice supports video posts up to 1080p with synchronized audio. A video posted to the display during a session will auto-play with audio. When moved from the On-Screen Area to the On-Deck Panel, the video will auto-pause and auto-mute. Users can control video(s) posted to the display with the Solstice video player. The Solstice video player functions similarly to other video players, with play/pause buttons, volume control, mute/unmute, fast-forward/rewind, and loop options. As with all Solstice media posts, any user with session access can control any video posted to the display. Solstice will only play audio from one source at a time. If multiple videos with audio are posted to the display On-Screen Area, audio from the first video only will play. Other audio sources will be auto-muted.
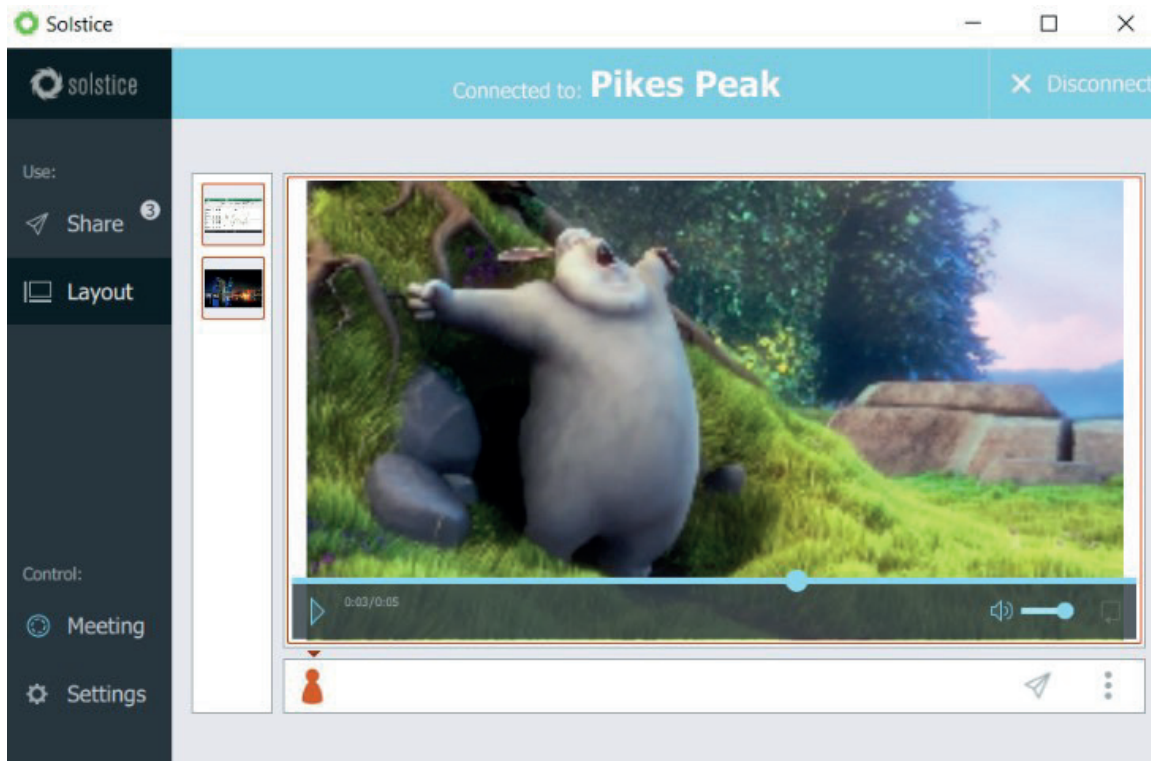
NOTE: Solstice supports a broad range of video types, but not all video files are supported. If a video file is shared but does not post correctly to the display, the user can open and play the video from their desktop, and share/mirror their desktop to the display with audio. Apple product users taking advantage of the Solstice Bonjour Proxy may not be able to share all video types.

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using the solstice mobile app

The apps for iOS and Android look and function very similarly to the Windows and Mac OS X apps with a few exceptions. The most significant difference is the sharing options for mobile devices are different than those available on Windows and OS X devices. The Solstice app on mobile devices features a 'Mirror Screen' option in place of the 'Desktop' and 'App Window' sharing options on Windows and OS X devices.
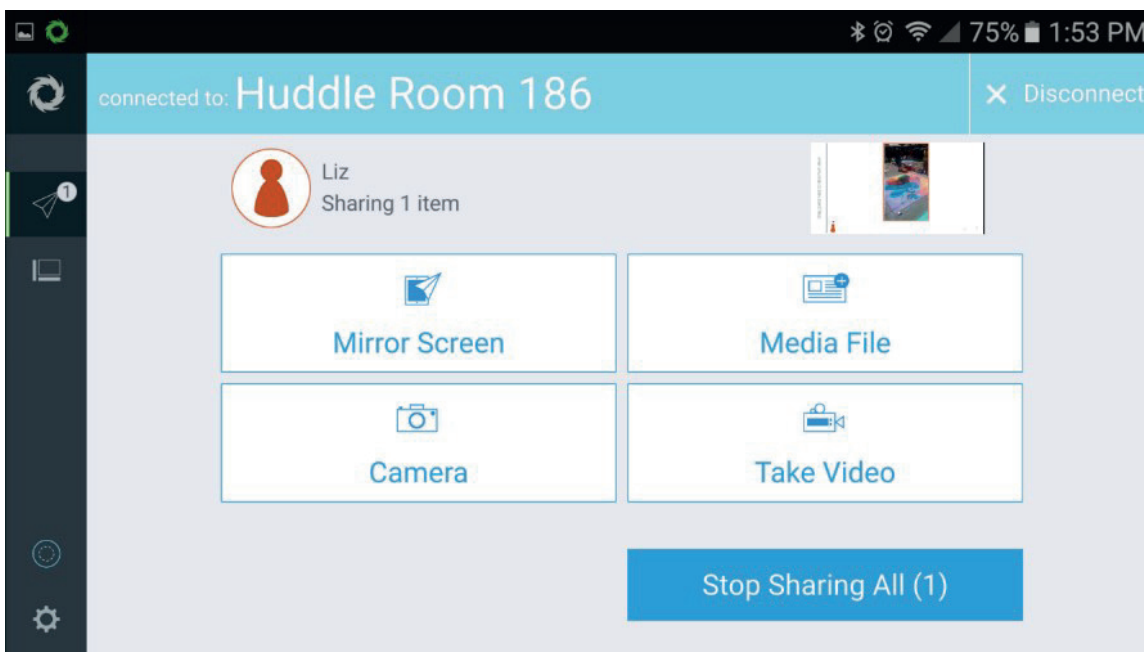
The Android and iOS mobile device app sharing options include:

- **Mirror Screen //** mirror the device screen on the display as a media post. This feature is supported for devices running iOS 7 or newer and Android version 5.0 Lollipop and newer. Users running older versions of iOS and Android will see a 'Webview' option instead of 'Mirror Screen'.
- **Webview //** browse the web to access the web content you want to share on the display, including cloud applications present on the Webview homepage: Dropbox, OneDrive, SugarSync, Google Search, Google Drive, Facebook, Flickr, Instagram and Box. Users with iOS 7 or newer and Android version 5.0 Lollipop or newer can show web content and more by mirroring their device screen. Therefore, the 'Webview' sharing option is replaced with a 'Mirror Screen' option for these users. Note that due to a limitation with available APIs, Android devices do not share audio when mirrored to a Solstice Display.
- **Media File //** access and share media from the device's media library.
- **Camera //** access the device's native camera and take a photo to share to the display.
- **Take Video //** access the device's native camera and take a video to share to the display.

mirroring ios devices to the solstice display

Solstice supports full mirroring of iOS devices (Apple iPhones and iPads) that feature Apple's AirPlay® functionality, including devices with iOS 7 and higher. This means that the screen view of iOS devices with AirPlay® can be posted to the display, regardless of what is visible on the screen.
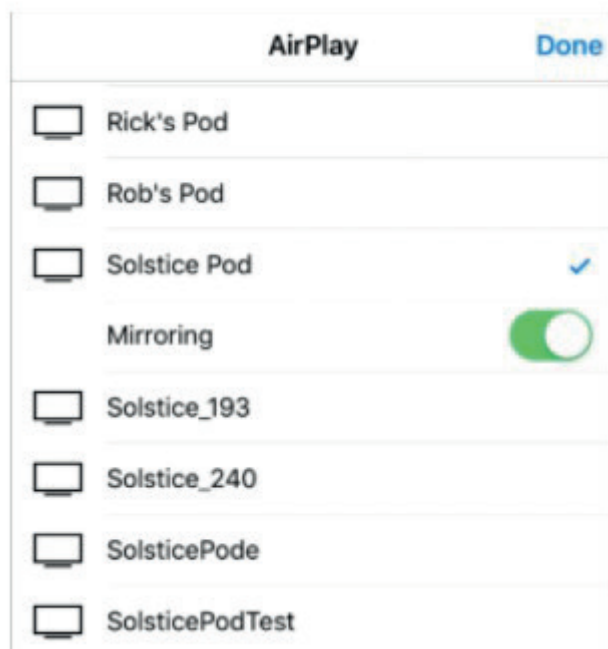
AirPlay mirroring is accomplished through the device's native AirPlay® feature, using a similar process as connecting to an Apple TV. To mirror your iOS 7+ devices with AirPlay®, follow these steps:

1. Ensure the iOS device is on the WiFi network used to connect to the Solstice display.
2. Swipe upward from the bottom of your screen to open the iOS Control Center.
3. Tap the AirPlay® button and find the desired Solstice display.
4. If the desired display does not appear in the AirPlay ® menu of your device, connect to the desired display first via the Solstice App. Then repeat step 2.
5. Once the desired display is shown in the AirPlay menu, tap and enable mirroring.
6. If prompted, enter the screen key visible on the Solstice display.

On networks with no IT restrictions, AirPlay® mirroring should just work by default. For networks that do not allow UDP broadcast/multicast traffic and/or have network port restrictions, the ability to mirror with AirPlay® will need to be enabled and configured by using Solstice's 'Enable AirPlay Discovery Proxy' feature in the Solstice Configuration Panel or Solstice Dashboard. Contact your IT team and/or refer to the Solstice Network Deployment Guide to configure AirPlay® mirroring.

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solstice network setup

Solstice operates over standard TCP/IP networks. Solstice is flexible and the specific network configuration details should be determined by business needs and existing network IT policies. At a minimum, Solstice uses three sequential ports to communicate. By default, these are 53100, 53101, and 53102 and may be configured on a per-display basis.
For detailed network deployment instructions and a complete list of ports, refer to the Network Deployment Guide.

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create solstice dongles

Solstice user apps may be installed on USB drives to allow anyone to connect to a Solstice display by plugging in the dongle and running the software from there.

download solstice dongle software files

Visit www.mersive.com/download and download the three Solstice Client Dongle Software files to your computer.

install solstice client software on your usb drive

- Plug your USB drive into a USB port on the computer you used to download the Solstice Client Dongle Software files.
- Create three new directories (i.e. folders) on your USB drive, one entitled 'Mac', the second 'Windows 7-8-10', and the third 'Windows XP'.
- Choose either Solstice Client Software zip files for Windows that you downloaded and extract the files (right click from Windows or double-click on a Mac) to the corresponding Windows directory on your USB drive. Repeat this process for the other Windows Solstice Client Software zip file and directory.
- Next, with your USB drive plugged into a **Mac OS X** computer, double-click the Mac tgz file that you downloaded and drag the Solstice app to the 'Mac' directory on your USB drive. **This step must be completed via Mac OS X.**

make additional dongles

Repeat the process above as often as needed to create additional Solstice client dongles.

writing and using nfc tags to connect to a solstice display

Solstice supports the writing and use of NFC tags for quick, easy connection to Solstice displays. Near Field Communication (NFC) tags are small medallions that can be placed anywhere near a Solstice display to allow users with NFC-enabled Android devices to connect to the display by simply tapping their device on the tag. Solstice requires 512 byte NFC tags. Note that not all NFC tags are compatible with all NFC-enabled devices.

writing nfc tags for solstice via the android client app

Android devices with NFC support and the Solstice app installed (version 2.4 or later) can be used to write NFC tags. On these devices, a 'Create NFC Tags' option will appear in the Meeting menu of the client app when connected to a display. The Android user can now select the 'Create NFC Tags' option and program as many NFC tags as desired by simply holding the Android device to the NFC tags. These tags will now be programmed to allow users to tap-to-connect to the particular Solstice display. To create NFC tags for connection to other Solstice displays, simply connect to the desired display, select 'Create NFC Tags' from the settings menu, and hold the Android device to the desired NFC tags. Solstice requires 512 byte NFC tags. Note that not all NFC tags are compatible with all NFC-enabled devices.
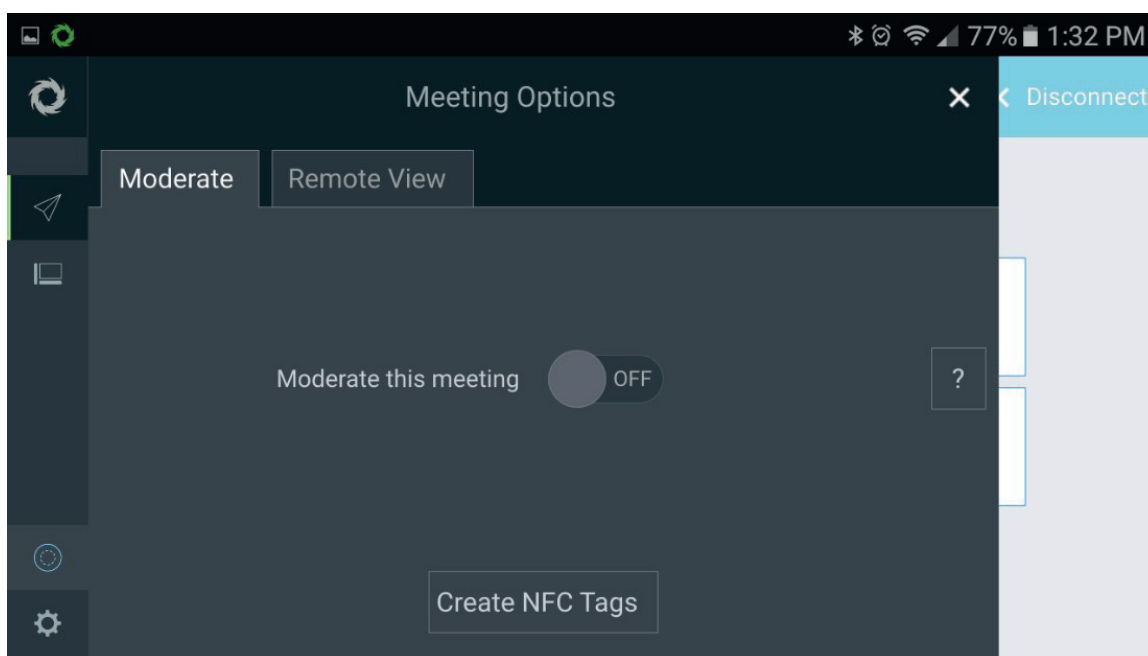
using nfc tags to connect to a solstice display

To connect to a Solstice display using an NFC tag, hold an NFC-enabled Android device to the programmed NFC tag until the connection is made and the Solstice user app is launched. The process should take a few seconds at most. Upon launch, the app will automatically connect to the Solstice display for which the NFC tag is programmed. If the session requires a screen key or password for access, the user will be prompted to enter the screen key or password before access to the session is granted. Note that not all NFC tags are compatible with all NFC-enabled devices.

Users that do not already have the Solstice app installed will be redirected to first install the Solstice app. Once the Solstice app is installed, the user can then tap the same NFC tag again to connect.

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