Solstice Pod User Reference Guide – Version 2.5

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Introduction

The Solstice Pod User Reference Guide provides a summary of the Solstice Pod for users, including an overview of how Solstice works as well as steps for users to connect, share and control posts to a Solstice wireless display using laptops, mobile devices and the display user interface. The Solstice Pod is compatible with nearly any display and improves meeting efficiency, engagement, and productivity.

Key Terms

Solstice (Wireless) Display – The flat panel or projector display that is connected via a video cable to the Solstice Pod, allowing users to connect and share content.

Solstice Pod – Compute console that connects to the display by video cable and runs an integrated, Android version of the Solstice server software.

Solstice client software/app – Application installed on user laptops and mobile devices used to connect, share and control the Solstice display.

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

Solstice System Overview

A diagram of a typical Solstice-enabled conference room setup is shown below. The requirements for an operational system are straightforward. First, a display connected via HDMI video cable to a Solstice Pod is needed. Next the Solstice Pod should either be attached to an existing network, attached multiple networks, or deployed as a standalone collaboration hotspot using the Pod wireless access point (WAP) capabilities. Then laptops and mobile devices with access to the Pod's network(s) can connect to the Solstice display.

There are two software programs that work in tandem to use Solstice for meetings:

Solstice Software (server) is integrated on the Solstice Pod connected to the display. The software is licensed at the time of purchase from Mersive or one of its authorized resellers. For more information on licensing, refer to the *Appendix A: Solstice Licensing*.

Solstice client software/apps are installed on Windows or Mac laptops, Windows 8 tablets, or Android or iOS mobile devices used to connect and share media to the Solstice display. Solstice client apps are free and can be accessed/downloaded from www.mersive.com/get-solstice.

Alternatively, Solstice client apps can also be accessed by entering the IP address visible on the Solstice display into a web browser on the client device. All laptops and mobile devices need to be connected to the same network as the Solstice Pod. Android and iOS devices will also require Internet access to download the app. Once installed, the app will remain on the device for future use and does not need to be downloaded/installed again.

Solstice client 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 client laptop. Instructions for creating Solstice dongles are available at www.mersive.com/get-solstice.

Starting a Solstice Display

In order to start using your Solstice display, first ensure the display is powered on and that the Pod is connected to the display via a video cable. Next, check that the Pod input is selected on the display. Lastly, ensure your Pod is plugged in and Solstice is running. At this point, you will see the Solstice splash screen on the display with instructions to get started.

Getting Started with the Solstice Display Splash Screen

Figure 1: Solstice Display Splash Screen

Upon system launch, Solstice has a built-in splash screen that informs users how to get the Solstice client software app onto their devices and connect to the display. The splash screen also provides access to the Solstice Display Menu, which contains access to system access security and configuration options. Mersive recommends reviewing and setting the Solstice Display Menu options before using the Solstice display.

When enabled via the Solstice Dashboard, bulletin messages will show/scroll across the top banner between the 'solstice wireless display' title on the left and the SSID on the right (when SSID is enabled). Once any content is shared to the Solstice display, the bulletin messaging will disappear.

Accessing the Solstice Display Menu

To access the Solstice Display Menu when Solstice is running click the Solstice icon in the bottom right corner of the display (using a mouse or supported touch screen). Menu options include 'Access Control' (visible only when Access Control is set to 'Determine at Runtime' in the Configuration Panel), 'Lock', 'Disconnect All Users', and 'System'.

Figures 2 & 3: Solstice Display Menu

Access Control options are only visible when access control is set to 'Determine at Runtime' in the Solstice Configuration Panel or via the Solstice Dashboard. When visible, there are four access control settings:

Open allows anyone to join the session, post media and control the display.
Screen Key allows only those who can see the screen key in the bottom left corner of the Solstice display to connect to the session.
Password allows only those with the password – set in the Configuration Panel or via the Solstice Dashboard – to connect to the session.
Moderated requires users to request to join the session as Hosts or Guests. To join as a Host, the user will need the session password, which is set in the Configuration Panel or via the Solstice Dashboard. Hosts have full sharing rights and control of the display during the session. Users that do not have the session password can request to join as Guests and must be approved by a Host to join the session. Further Hosts will review and approve or reject media posts submitted by Guests, and Guests do not have control of posts on 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 media posted by the users.
System provides access to the local Configuration Panel.
Configure opens the local Configuration Panel. See *Appendix D: Configuring a Solstice Display* for more information.

Connecting to a Solstice Display from User Devices

In order for users to connect to the Solstice display, ensure the Solstice Pod is powered on and Solstice is running with the Solstice interface is visible on the display. Then ensure that client devices are connected to the same network as the Solstice Pod via Wi-Fi or Ethernet connection.

With Solstice running, users can connect in two ways from their client devices as described on the Solstice display splash screen. First-time users that have not previously installed the Solstice client

software app on their device can simply open a web browser on their device and enter the IP address visible on the Solstice display. Clicking 'Connect' on the browser landing page will download the client app, or it will redirect iOS users to the Apple App Store and Android users to the Google Play Store to download the client app. Once downloaded, install/launch the Solstice app.

Once downloaded and installed, the app will remain installed on the user's client 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.

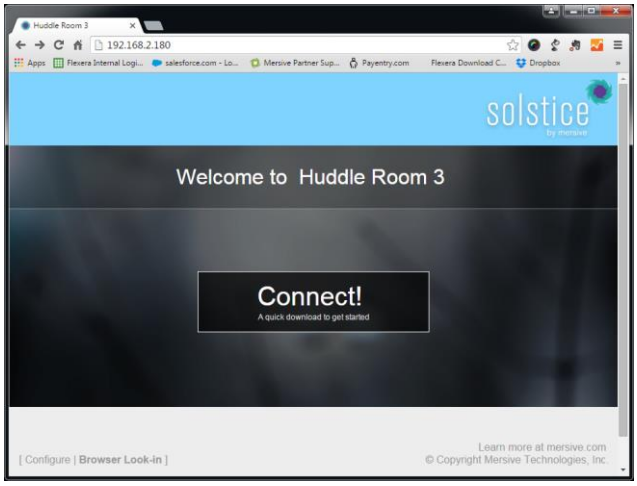


Figure 4: Solstice Browser Connect Screen

The Solstice client app features support for both Japanese and English languages. The client app language is set automatically based on the language that the client device's operating system is set to. The Solstice app will default to English for client devices set to languages other than English or Japanese.

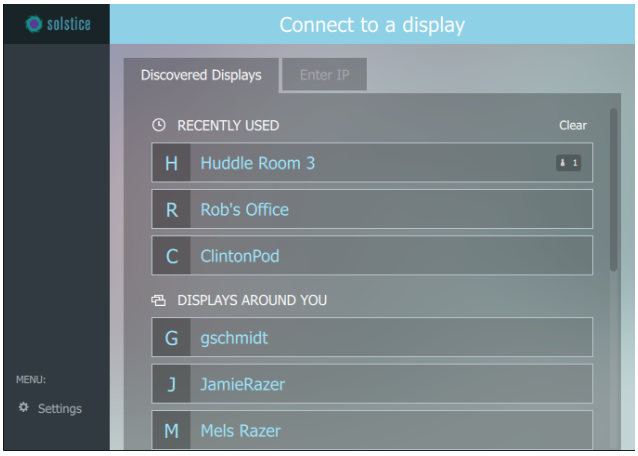


Figure 5: Solstice Client Software Connection Screen (Windows client)

Once a Solstice client app is open, the user will see the Solstice client connect screen, showing a list of displays available to connect to on the network, as well as an 'Enter IP' tab, and 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 when the desktop is shared (Windows and

Mac clients only), and input the Solstice Directory Service IP address (for non-broadcast display naming and discovery – see the SDS Reference Guide for more information). Once the user connects to a display, the settings menu will also allow the user adjust the session access control (if Access Control is set to 'Determine at Runtime' in the Solstice Configuration Panel or via the Solstice Dashboard).

To connect to a display, click to connect to a display from the list provided, or select the 'Enter IP' tab, and enter the display's IP address. If the Access Control setting is set to Open, the client will automatically join the session with full posting and control rights. If the Access Control setting is set to Screen Key or Password, the user will have to enter the Screen Key (visible on the Solstice display) or Password (designated in the Solstice Configuration Panel or via the Solstice Dashboard) to access the session. If the Access Control setting for the session is set to Moderated, the user will be prompted to join the session as a Host or a Guest and enter the Host password or wait for a session Host to approve the request to join as a Guest. 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 Open, Screen Key, or Password. For these sessions, any user that attains access to the session has equal sharing and control rights. Moderated sessions – with Access Control set to Moderated – allow one or more Host users to lead the session by controlling what is published to the display and the layout of posts. In these sessions, non-Host users can request to join as Guests with restricted sharing and control rights.

Using Solstice for Collaboration Sessions

Solstice supports a broad range of user modes – from basic one-to-many wireless presentations, to egalitarian collaboration among any number of users posting and controlling unlimited content on the display simultaneously. In this section, we'll provide an overview of using Solstice for full egalitarian collaboration, covering first the client/user apps followed by the Solstice display interface. The next section will cover how Solstice is used for moderated sessions led by one or multiple Host users.

Solstice Client App during Full Collaboration Sessions

When users connect to a display, they will see the sharing panel with user and session information at the top of the app interface, as well as the available sharing options in the center, and thumbnail view of the display in the upper right section of the interface.

Figures 6: Solstice Client Share Panel (full collaboration session – desktop shared)

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. Note that when desktop audio I shared, the volume is controlled by the audio source from the user device, outside of the Solstice client app.
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. Additionally, the sharing options users see can be enabled/disabled individually in the Configuration Panel or via 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 client 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. So the security of shared documents and data is never compromised/at-risk.

The client app interface also consists of a side bar menu with options for toggling between the sharing panel and the control panel, as well as 'Settings' and 'Look-In' options. (Note the side menu will appear along the top of certain mobile devices when the device/app is in portrait orientation.) Lastly the 'Disconnect' button will disconnect the user from the Solstice display/session.

Toggling to the control panel replaces the sharing panel with a what-you-see-is-what-you-get interface with options for controlling the media on display. Refer to the *Managing Media Posts on the Solstice Display* section for more details about the control panel. The 'Settings' options are the same as those from the Solstice client connect screen with only the addition of Access Control options (if Access Control is set to 'Determine at Runtime' in the Solstice Configuration Panel or via the Solstice Dashboard). The 'Look-In' option provides the user an option to view the display up close on their device via a web browser and includes 'native' resolution, 'full screen', or 'fit to window' views.

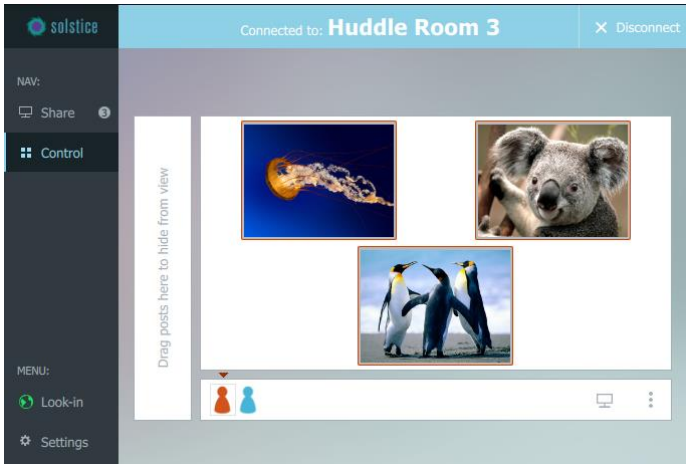


Figure 7: Solstice Client Control Panel (full collaboration session)

The client software control panel (see Figure 7) enables users to control media on the display in a number of ways. To access the control panel from the share panel, toggle to the 'Control' option in the left side

menu. To go back to the share panel, toggle back to the 'Share' option.

From the control 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 display icon button in the lower right area of the client interface and select the type of item you would like to share.

Solstice Display Interface during Full Collaboration Sessions

The Solstice display interface serves as a collaborative digital workspace during Solstice session with rich features and functionality to improve meeting-room collaboration and productivity. For example, Solstice supports display-side interaction via a mouse connected to the Solstice Pod. Display-side interaction enables the Solstice display-side user to control the shared content on the display, using the Solstice Pod as connected client in the Solstice session.

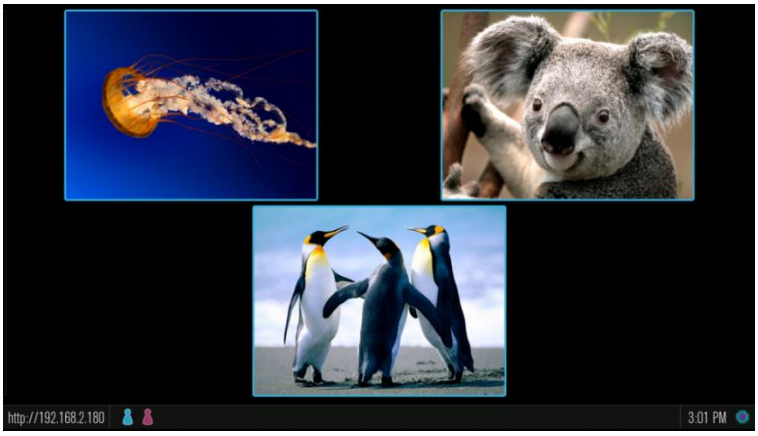


Figure 8: The Solstice Display Interface

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 *Appendix D: Configuring a Solstice Display* for more.
Screen Key (not pictured) – 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, which users are required to enter in order to join and participate in the session. This ensures only those in the room with a view of the display can connect to the session in order 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 (not pictured) – The Meeple Menu, accessed by left clicking on any Meeple icon, provides the display-side user access to per-user control of the individual users in 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 (not pictured) – This menu, accessed by left clicking the Solstice icon in the lower right corner of the display, provides the display-side user session Access Control and Configuration options. See *Accessing the Solstice Display Menu* for more details.
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 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. 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 next section, *Managing Media Posts on the Solstice Display.*

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 host/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.

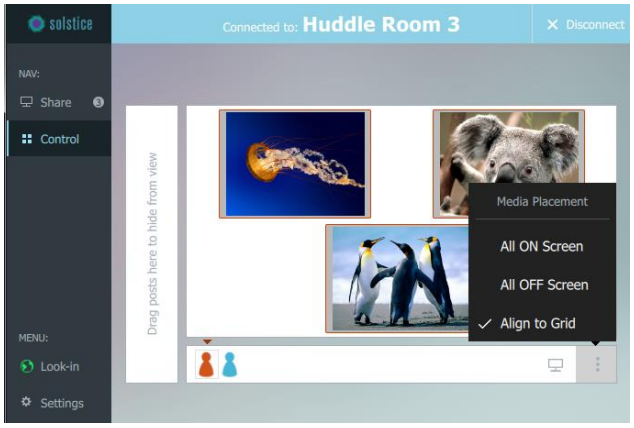


Figure 9: Controls for Display Layout of Media (from Solstice client app)

Placement and Layout. There are two layout modes that can be designated by accessing the Media Placement menu, align to grid (default) and freeform (enabled by deselecting 'Align to Grid'). To access the menu from Solstice client apps, click the alignment icon in the bottom right corner of the control panel (see Figure 12 above). To access the menu from the Solstice display interface, left click-and-hold any part of the display On Screen Area that isn't covered by a media post. The menu will appear.

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 the ability to 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 client and display-side users. These are the basic layout control options.

Media Actions. There are specific actions available for each media post which are accessible by right-clicking the media post, tapping-and-holding on touch-enabled devices, or left clickick-and-holding for

the display-side users:

Delete removes the media post from the session completely.

Create 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.

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.

Preview enables a user to enlarge a post to nearly-fullscreen size – by double-tapping/clicking the post – without moving other posts in the On Screen Area to the On Deck Panel.

Figure 10: Media Actions (client view)

Stack Actions – When multiple posts are compiled into a stack on the display – which is indicated by a small number in the top right corner of the post – there are specific actions available which are accessed by right-clicking the stack, tapping-and-holding on touch-enabled devices, or left click-and-holding for the display-side users:

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.

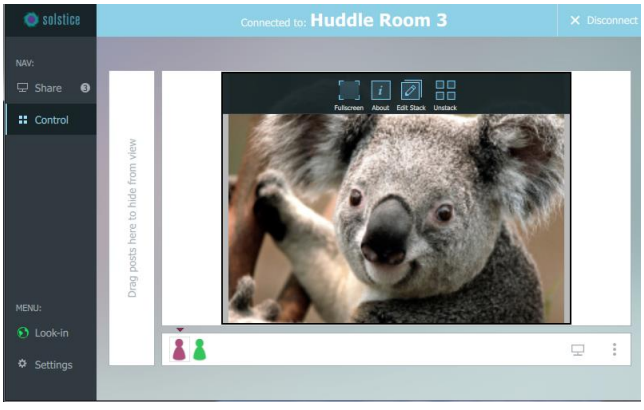


Figure 11: Stack Actions (client view)

Video Posts on Solstice – Solstice supports video posts up to 1080p at 30fps or higher 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, as well as 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.

Figure 12: Video Post on the Solstice Display

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 their desktop to the display with audio.

(continued on the next page)

Using the Solstice Mobile App

The Solstice client software app for iOS and Android devices has a slightly different user interface than the app for Windows and Mac OS X clients.

The apps for iOS and Android look and function very similarly to the Windows and Mac OS X client apps with a few exceptions. The most significant difference is the sharing options from mobile devices vs Windows and OS X clients. The Solstice app on mobile devices features a Mirror Screen option in place of the Desktop and the App Window sharing options available on Windows and OSX.

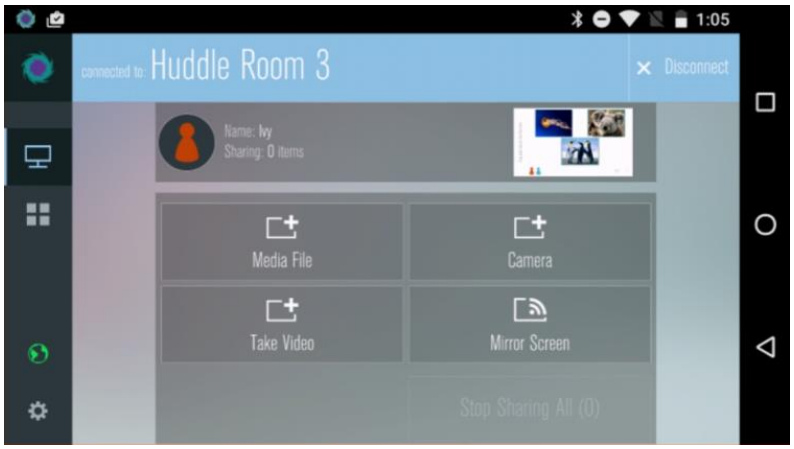


Figure 13: Sharing Options for Mobile Devices (Android client app pictured)

The Android mobile device app sharing options include:

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.
Mirror Screen – mirror an Android device screen on the display as a media post. This feature is supported for devices running iOS 6 or newer and Android version 5.0 Lollipop and newer. Users running older versions of Android will see a 'Webview' option instead of 'Mirror Screen'.
Webview (not pictured) – 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 Android version 5.0 Lollipop or newer can share web content and more by mirroring their device screen. Therefore, the 'Webview' sharing option is replaced with a 'Mirror Screen' option for these users.

The iOS mobile device client app sharing options:

Media File – access and share media from the device's media library.
Camera – access the device's native camera app and take a photo to share to the display.
Mirror Screen via AirPlay (outside Solstice app) – mirror an iOS device screen on the display as a media post via the iOS device's native AirPlay feature. Mirroring is supported for devices with iOS 6 or newer. For more info on iOS mirroring via AirPlay, refer to *Mirroring iOS Devices to the Solstice Display.*
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.

Mirroring iOS Devices to a Solstice Display

Solstice supports full mirroring of iOS devices (Apple iPhones and iPads) that feature Apple's AirPlay® functionality, including devices with iOS 6 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 device screen.

Figure 18 & 19: iPad and iPhone AirPlay® Menus

AirPlay mirroring is accomplished through the device's native AirPlay® feature, using a similar process as connecting to an Apple TV. To mirror your AirPlay®-enabled device, first ensure the device is connected to the network you will use to connect to the Solstice wireless display. Then follow the steps below for your device's iOS version:

iOS 6: Start by opening the Solstice app on your device. Next double-tap your device's home button. Then swipe to the right on your dock (bottom). Select the name of the desired Solstice display and enable mirroring.

iOS 7, 8 & 9*: Start by opening the Solstice app on your device. Next, swipe upward from the bottom of your screen. Then tap the AirPlay® icon. Select the name of the desired Solstice display and enable mirroring.

**Mirroring support for iOS 9 is available with the Solstice Pod versions 2.5 and later. Earlier versions of the Solstice Pod do not support mirroring for iOS 9 devices.*

If the desired display does not appear in the AirPlay® menu of your device, connect to the display via the Solstice App first. Then the display should appear in the AirPlay® menu to begin mirroring. Note that Solstice Pods support one iOS mirroring stream at a time.

In addition to following the steps above, you network must be configured to allow for iOS mirroring. There are two setup options that will enable mirroring with AirPlay® on the network. For networks that allow UDP broadcast traffic and Apple's Bonjour protocol, mirroring will work automatically based on Solstice's default settings. For networks that do not allow UDP broadcast traffic and/or Apple's Bonjour protocol, the 'Enable AirPlay Discovery Proxy' feature must be enabled in the Solstice Configuration Panel or remotely via the Solstice Dashboard.

Refer to the Solstice Pod Network Deployment Guide from the Mersive Customer Support Portal for more information.

Mac laptops with OS X 10.8 and higher can also be mirrored via AirPlay®. However it is recommended that OS X users mirror to the display via the Solstice client app's 'Share Desktop'.

Using Solstice for Moderated Sessions

Solstice Client App during Moderated Sessions

When the Access Control for a Solstice session is set to Moderated, users are prompted to join the session as a Guest or as a Host when they connect. Connecting to the session as a Host will require the Host password, designated in the Solstice Configuration Panel or remotely via the Solstice Dashboard, and will provide the user with the same, full sharing and control rights as non-moderated sessions. Additionally, any session Host 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 Host client apps. Joining the session and posting media as a Guest requires approval from a Host of the session. Guests do not have the ability to control layouts or edit/remove posts.

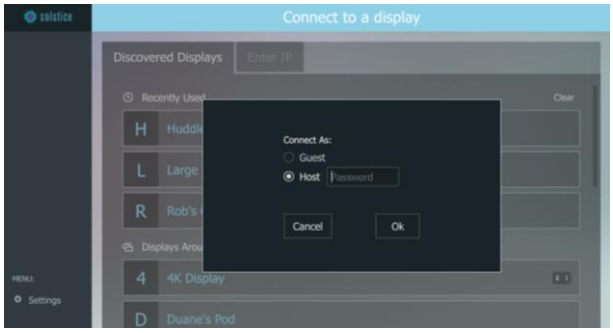
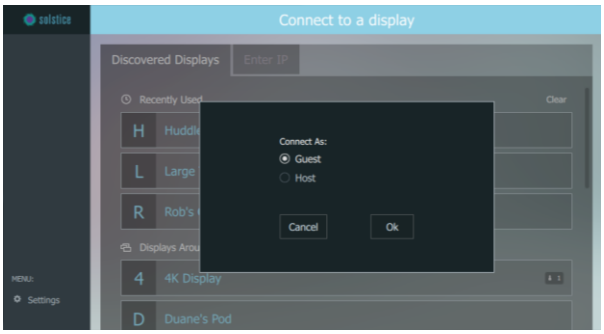
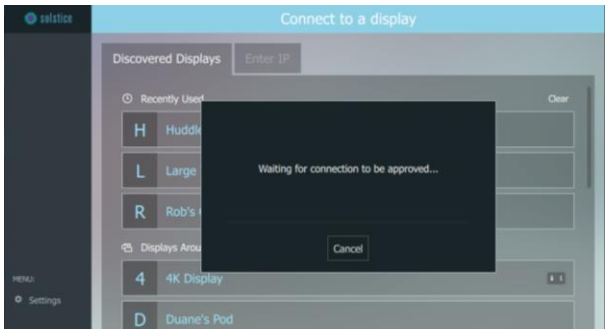


Figure 14: Joining a Moderated Session as a Host

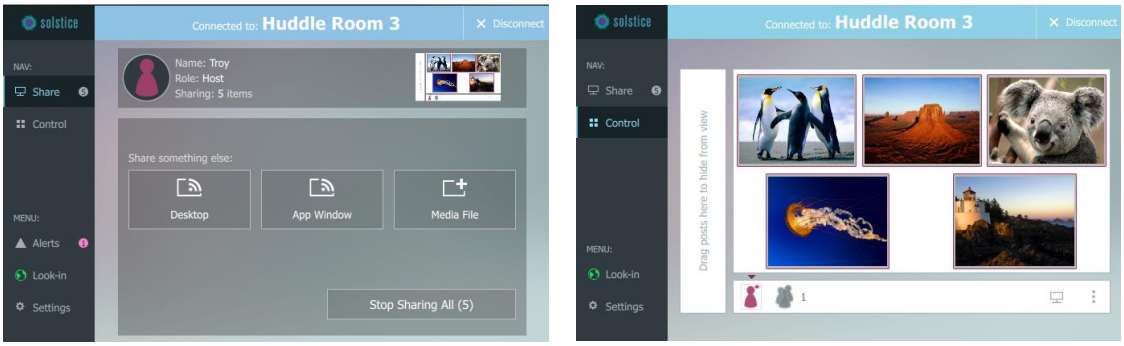




Figures 15 & 16: Joining a Moderated Session as a Guest

There are some changes in the Solstice client app interface during Moderated Sessions:

Role – at the top of the share panel, the user's role is designated as Guest or Host.
Alerts – visible only to Host users, these numeric indicators appear in the navigation menu of Solstice client apps and represent 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.
Host Meeple – session Hosts are indicated by the addition of a small dot in the Solstice client interface and a line below the Meeple graphical indicator on the Solstice display interface.



Figures 17 & 18: Solstice Client Interface – Moderated Session

Solstice Display Interface during Moderated Sessions

The Solstice display interface also features some changes when the Access Control for a session is set to Moderated. The display-side user – who participates via a USB mouse connected to the Solstice Pod – is automatically a session Host, and therefore the display interface includes features that allow the display host user to Moderate the session. Additionally, the Meeple menu changes to distinguish between Hosts, Guest that are actively sharing a post to the display, and the Meeple Group which consists of Guest users that are not currently sharing media.

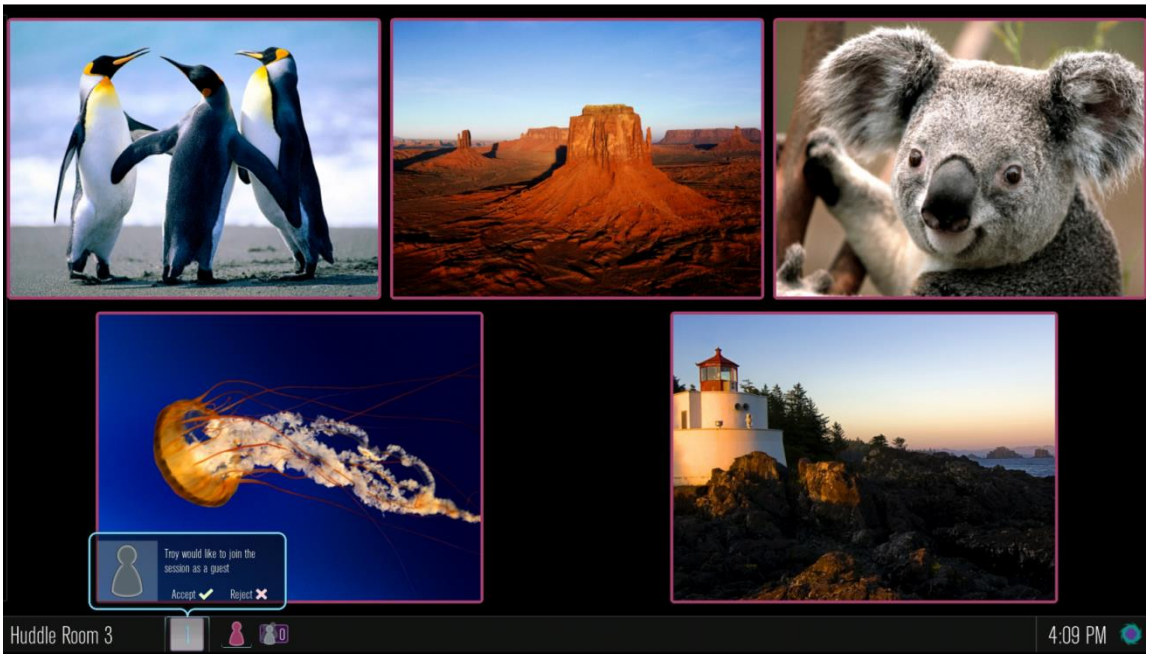


Figure 19: Solstice Display Interface – Moderated Session

Alerts – graphical indicator representing user requests to join the session as Guests and Guest requests to post media.
Meeple Group – graphical indicator of Guest participants that are not currently sharing media to the display.
Host Meeple – indicated by the addition of a line below the Meeple graphical indicator on the Solstice display interface.

Appendix A: Solstice Licensing

The Android version of the Solstice server software that is integrated on the Solstice Pod is a licensed Mersive product. Free trial versions of Solstice Software (server) for Windows are available from Mersive and its authorized resellers, as well as permanent Solstice Software licenses and Solstice Pods for purchase. Solstice client apps are free. With a licensed Solstice Pod, an unlimited number of clients/users can connect to the display via the free Solstice client app. With a Solstice Pod Small Group Edition (SGE) license, up to four clients/users can connect to the display at one time.

Solstice Pods include a licensed Android version of the Solstice server software that is activated upon purchase, so the unit is ready for use upon delivery. One-click software updates provide continuous upgrade path for the Solstice Pod. You can see when updates are available for the Pod within the Configuration Panel. You will also be notified by email when updates are available at the email address associated with your account.

An active Solstice software maintenance plan is required to install software updates for the Solstice Pod. The first year of software maintenance is included with the initial purchase of the unit. Subsequent software maintenance can be purchased from Mersive or through its authorized resellers. To inquire about the status of your Solstice software maintenance plan, contact customerrelations@mersive.com. Software updates for user client apps are free.

Appendix B: Solstice Requirements and Hardware Specs

The Solstice Pod includes an Android version of the Solstice server software integrated on a hardware console purpose-built for wireless media streaming.

The Solstice Pod Console

Solstice Pod Technical Specifications

Dimensions	
Hardware Type	Compute Console
Size	4.2 x 4.75 x 1 in (5 x 7.4 x 3.5 in. Shipping)
Weight	2 lbs. (3lbs. shipping)
Mounting Options	Console tabletop or VESA compliant mounting bracket
System Specifications	
Processor	NVIDIA Tegra4 Quad Core
Graphics Processor	72 GPUs – Tegra4
Internal Storage	16GB Flash Memory
Wireless	Dual band, 802.11n 2x2 Mimo WiFi
Video Output	HDMI 1.4 output with Audio
Streaming Video Support	HD (1920x1080), HD SD (1280x720)
I/O	USB 2.0 and USB 3.0
Bluetooth	4.0
Operating System	Android 4.4.2
Hardware Ports	• Power connector, DC 5.2V at 3Amps • MicroSD Card Slot (administrative purposes only) • HDMI 1.4 • Ethernet • USB 2.9 • USB 3.0
Power	
Input	DC 5.2V
Efficiency Level	V
Adaptor	Switching, changeable plug type for international power options

Solstice Client/User Devices – Technical Requirements

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 6.0 or later	Gingerbread OS (2.3.x) or later
Minimum Required	Intel Core 2 Duo 2.3Ghz 2 GB RAM	iPad 2 or later iPhone Gen2 or later	Phones/Tablets with Android 2.2 or later
Recommended	Intel Core i7 2.3Ghz 6 GB RAM	iPad/iPhone 3 or later with Retina display	Phone/Tablets with Android 4.0 or later

Solstice Network Requirements

Network and Internet Access
When the Solstice Pod is deployed on an existing network, a wired or wireless network connection with a minimum bandwidth of 20 Mbps is required. When running HD content, allocate 50 Mbps minimum. Like any network application, available bandwidth can impact overall performance. Alternatively, the Solstice Pod can be deployed using its built-in wireless access point capabilities. Internet access is required to install software updates for the Solstice Pod. Internet access is also required to install Apple iOS and Android client apps and to update all client apps (i.e. Windows, Mac, Apple iOS, and Android).

Appendix C: Solstice Network Setup

Solstice operates over standard TCP/IP networks. Solstice is flexible and the particular network configuration details should be determined by business needs and existing network IT policies. For detailed network deployment instructions, refer to the Solstice Pod Network Deployment Guide.

Here are examples of five network configurations that support different enterprise needs and network topologies.

Setup	Business Scenario	Network Configuration
Off-Network WAP	Visitor centers and other meeting spaces where Solstice users do not require/have access to the existing enterprise network. The content to be shared is on users' devices, and anyone able to join the wireless hotspot can participate.	The Solstice Pod's wireless access point is enabled. The wireless collaboration hotspot does not provide internet access.
Dedicated Wireless Network	Any user who can join the dedicated wireless network is able to connect and share media to the display. Examples include areas without existing corporate/campus networks and meeting spaces with users that don't have access to the existing enterprise network.	The Solstice Pod is physically deployed on a dedicated wireless network separate from an enterprise network.
Single Enterprise Network	Small businesses and other environments where all Solstice users have access to the same enterprise network. This includes any meeting space with wired or wireless access to the enterprise network.	The Solstice Pod is attached to the enterprise network.
Isolated VLAN	Any user who can join the VLAN network is able to connect and share media to the display. Examples include guests and corporate users who connect to the VLAN network through WiFi in a conference room.	The Solstice Pod is physically deployed on the enterprise network but is logically isolated to a VLAN. The managed VLAN is typically given internet access.
Bridged Multiple Networks (via IP Routing)	Users on different networks need to connect to the same Solstice display. For example, both guest and enterprise networks exist and users on each need to collaborate in a meeting.	The Solstice Pod is attached to a network within the enterprise and receives traffic from (an) additional network(s) via routing IP traffic (based on network requirements).
Dual Networks	Users with access to the local network need to collaborate with users that do not have access to the local network, or have access to a local guest network. For example, customers or partners come in to collaborate with enterprise users in a meeting.	The Solstice Pod's Ethernet and wireless are enabled. The Pod is attached to the existing networks via Ethernet, and the WAP is enabled/setup (Internet access via WAP optional) OR the Pod is wirelessly attached to a second existing network.

NOTE: Because Solstice traffic is TCP/IP routable, you can modify these common configurations to match your specific needs and network setting.

In all configurations it is recommended that Solstice network traffic be allowed on ports/routes: 53100, 53101, and 53102. If these ports conflict with other ports in use, the Solstice Configuration Panel allows an IT administrator to change the base ports.

Because the Pod ships with a built-in wireless access point in addition to standard Ethernet + WiFi

capabilities, the network options are numerous and flexible. Below is a summary of the Pod network modes.

Solstice Pod Network Operation Modes	
Wireless Access Point	Deployed as a standalone WAP to support wireless peer-to-peer traffic. Configurable SSID and security settings. Ethernet adaptor is configured separately and can be enabled or disabled when the WAP is enabled (see final option below).
Wired Ethernet Client	Connected to existing network via Ethernet connection. Supports either DHCP or static IP configurations. The wireless antenna is configured separately and can be enabled or disabled when the Ethernet adaptor is in use (see final option below).
Wireless WiFi Client	Connected to existing network via wireless antenna. Supports either DHCP or static IP address configurations. This mode is only recommended when no Ethernet connection is available. Ethernet adaptor is configured separately and can be enabled or disabled (see final option below).
WiFi + Wired	Connected to an existing network via Ethernet connection. The Pod's WAP is also enabled OR wirelessly connect to an additional existing network. Supports enterprise network users and guest (network) users. Internet access for WAP-connected users can be optionally enabled by opening ports 80 and 443.

For more detailed information and instructions about Solstice network deployment, refer to the Solstice Pod Network Deployment Guide.

Appendix D: Configuring a Solstice Pod

The Solstice Pod Configuration Panel can be accessed via a USB mouse connected to the Pod or from a browser on any device connected to the same network as the Pod. To begin, first ensure the Solstice Pod is running. Then, with a USB mouse connected to the Pod, simply right click and the Solstice Configuration Panel will appear. Alternatively, select the Solstice icon in the bottom right corner of the Solstice display interface, and the select 'System' and 'Configure'. The Configuration Panel will appear.

You can also access the Configuration Panel by entering the Pod's IP address (visible on the bottom left corner of the Solstice display interface) into the web browser of a laptop or tablet that is connect to the same network as the Pod. Then select 'Configure' in the bottom left corner of the browser page. Note that browser configuration must be enabled via the Dashboard or local Configuration Panel.

The first time an admin attempts to access the web Configuration Panel, their web browser will launch a security warning, which the admin must accept/click-through to access the web-based Configuration Panel. The reason for the warning is that the Pod uses HTTPS for added security for the browser configuration feature, but Mersive is not able to provide a registered SSL certificate because the Pod includes its own web server capabilities instead of using Internet web servers where SSL certificates are registered. The web based configuration poses no added security risk and the security warning should be accepted/clicked-through.

The Solstice Dashboard is a centralized management tool that provides the ability for an administrator to configure multiple/all instances of Solstice (both Pod's and Solstice Software) on a network from one central location, including one-to-many/simultaneous updates. The Dashboard also exposes some additional configuration functionality not available from the Pod Configuration Panel, such as the ability to post bulletin and/or emergency broadcast messages to any/all Solstice displays on the network. For more information about the Solstice Dashboard, visit the Dashboard download page and refer to the *Solstice Dashboard Reference Guide* in the Mersive Customer Support Portal.

Solstice Pod Configuration Panel

There are four tabs: Display, Network, Tools, and Updates & Licensing.

The **Display** tab allows the administrator of the display to change numerous settings and is divided into four sections:

Naming and Discovery allows the administrator to name the Solstice display and configure how the name appears on the display interface and on the network. The name of the display appears in the lower left corner of the Solstice display when the Solstice Pod is running and will appear in the list of available displays on the Solstice client app for users to connect. This can be a name, an IP address, or both can be enabled in which case the display will alternate showing both.

The network option to 'Publish display name to Solstice Directory Service' facilitates enterprise-compliant, non-UDP-broadcast/multicast display discovery. This requires SDS to be installed and configured on a Windows PC connected to the network. For more information about SDS, refer to the *Solstice Directory Service Reference Guide*.

Access Control designates how users will access the Solstice session, post to the display and restrictions to accessing the display. The Access Control options include:

Open allows anyone to join the session, post media and control the display.
Screen Key allows only those who can see the Screen Key in the bottom left corner of the Solstice display to connect to the session by entering the key.
Global Password allows only those with a non-visible password, set in the Solstice configuration panel, to connect to the session.
Moderated allows users to connect as Hosts or Guests. Host users must enter the Moderator Password, set in the Solstice Configuration Panel or via the Solstice Dashboard, and have full sharing rights and control of the display once connected. Non-moderator 'Guest' users can request to join the session, but both joining and sharing media posts must be approved by a Moderator, and Guest users do not have control of posts on the display.
Determine at Runtime allows the user to select the Access Control setting for each session from the Solstice display menu in the bottom right corner of the Solstice-enabled display.

Browser Look-In allows users to view the Solstice session from a browser on their device without the need for Solstice client software app. This feature is useful when a user wants to view the Solstice display on their device and/or does not require the ability to share or control content on the display. When enabled, users can access the browser look-in via a link from the Solstice client software app or by browsing to the display IP address and selecting 'Browser Look-In' in the bottom left corner of the page.

Encryption allows for Solstice network traffic between the Pod (server) and user devices (clients) to be encrypted using a standard RSA/SHA cipher with a 2048 bit private key. The encryption feature includes network traffic related to remote configuration via the Solstice Dashboard and the Pod's web-based configuration. ***Note when encryption is enabled for a display, that Solstice instance will no longer support connection from pre-2.5 versions of the Solstice client apps. Users will be required to update in order to connect.***

Resource Restriction enables the administrator to specify what sharing options users see when connected to the Solstice Pod/display, designate the maximum number of connections (client devices) allowed, set the maximum number of posts that may be simultaneously shared on the Solstice display, and elect a size at which Solstice will automatically resize images. For Solstice Small Group Edition (SGE), the maximum number of connections (devices) is limited to four.

When the 'iOS Mirroring' sharing option is enabled, an additional option to 'Enable AirPlay Discovery Proxy' is available. The AirPlay Discovery Proxy enables iOS mirroring on networks that prohibit UDP multicast traffic and/or Apple's Bonjour protocol. To learn more, refer to the *Solstice Pod Network Deployment Guide*.

System allows the administrator to elect to automatically set time and date from an Internet time server, designate a different time server, or set time zone, date, and time manually, and/or password protect the settings. Other options in the System section include customization of the splash screen background image (available via web browser configuration only), designation of a system/network host name, selection of display-resolution and refresh-rate, and language selection (currently English and Japanese languages are supported).

Customization of the Solstice splash screen allows the host organization to brand their Solstice displays with their logo or other elements by replacing the default splash screen background image with a new background image designated by the organization. Replacing the splash screen image only changes the background; it does not remove the text instructions from the Solstice display. Customization of the splash screen is only available via the web configuration tool or the Solstice Dashboard. Mersive recommends the new splash screen background image be 1920x1080, or whatever resolution the display is. To change the splash screen, click 'Change…' and browse to the splash screen image you wish to use. The new background image will need to be present on the web configuration or Dashboard host device used to make the update.

The **Network** tab allows the administrator to configure the network settings for the Solstice Pod, including the Pod's Ethernet port, wireless capabilities, various network security options, and more. In addition to the information provided below, please review the *Solstice Pod Network Deployment Guide* and contact your IT admin for questions or assistance with network deployment of your Solstice Pods.

Ethernet Settings allows an administrator to enable/disable the Pod's Ethernet port. When the Pod's Ethernet is enabled, configuration options include designating DHCP vs Static IP address. When a Static IP address is enabled, additional configuration options include IP Address, Gateway, Network Prefix Length, DNS 1 and DNS 2. Contact your network IT admin for questions about settings for Static IP address. DHCP is recommended for small deployments and those companies/networks with no dedicated IT admin.

Wireless Settings allows an administrator to enable/disable the Pod's wireless capabilities, either as a standalone Wireless Access Point (WAP) – enabling users to connect direct to an SSID generated by the Pod – or attached to a separate existing network as a wireless client – providing users with access to the existing network the ability to connect to the Pod.

Additional configuration options are exposed for each of the two wireless modes once that wireless mode is selected. In WAP mode, a wireless network name (SSID) can be designated, as well we security options for users that want to connect to the Pod via the WAP. When the Pod is set to wirelessly attached to an existing network, options to scan/add wireless networks and input network password appear. Lastly the option to designate DHCP vs Static IP address appears again in this mode.

Firewall Settings allows an administrator to block all traffic between the Pod's Ethernet and wireless connections or to allow Internet access from the Ethernet port through to the wireless network via ports 80 and 443. This is useful when, for example, the Pod is connected via Ethernet to a corporate network and guest users join a meeting to collaborate alongside corporate users. The guest users can connect to the Pod's WAP and be granted Internet access without the guests ever accessing the corporate network.

Traffic and Ports allows an administrator to specify the base ports over which Solstice traffic will be transported. Solstice will use the port defined in this field as well as the next two in sequential order, plus port 80 for web configuration and client-server traffic.

The **Tools** tab allows the administrator to reboot the Pod if needed.

The **Updates and Licensing** tab provides details about your current software license, including installed version, available version, release date of the installed version, license type, installation date, maintenance expiration date, and info about the Pod including device ID, Ethernet mac address, and wireless mac address.

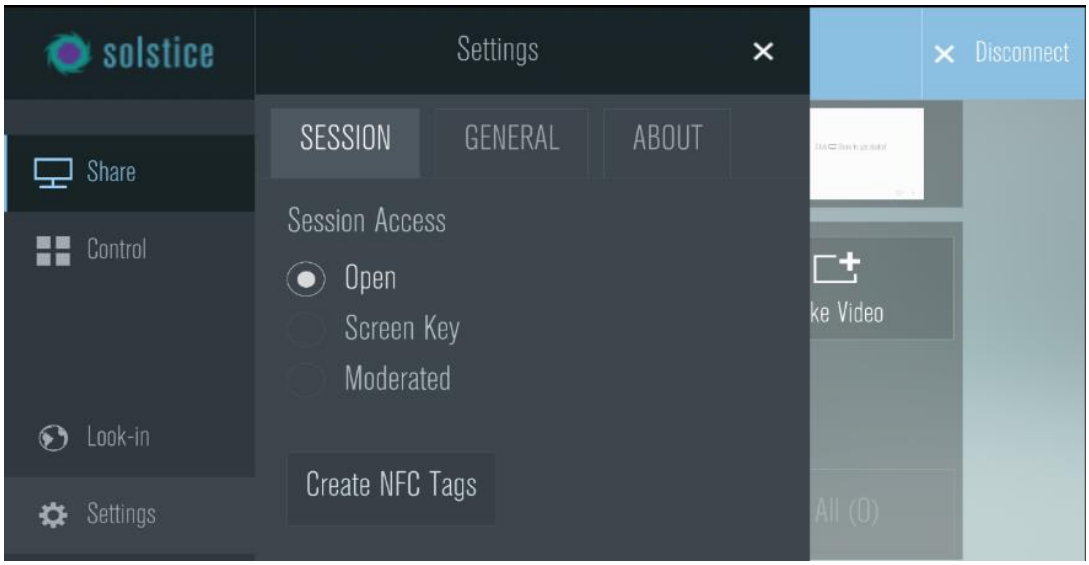
This tab also provides information about updates that are available, as well as an option to update you Solstice Pod software when updates are available. Information about updates and ability to update require Internet access.

Appendix E: 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 within view of 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 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 settings menu of the client app when connected to a display.



Android client app Settings Menu when connected to a Solstice 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 not all NFC tags are compatible with all NFC-enabled devices.

Using NFC Tags to Connect to a Solstice Display

In order to connect to a Solstice display using an NFC tag, simply hold an NFC-enabled Android device to the programmed NFC tag until the connection is made and the Solstice client 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 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.