

Solstice Cloud Deployment Guide

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About Solstice

Solstice is the Mersive award-winning collaboration software, installed on a dedicated hardware platform to deliver turnkey wireless content sharing and video conferencing tools. Plug any HDMI room display device into the Solstice Pod, and connect it to the network(s) that participants use to connect and share to the display. Users on the network can then follow on-screen directions to connect wirelessly to Solstice and share content. Meeting hosts can connect Solstice to meetings using their preferred video conferencing service.



Solstice Product Suite

- **Solstice Pod:** The dedicated device installed on an organization's network and connected to an HDMI display monitor that runs the Solstice wireless collaboration software.
- **Solstice Cloud:** Cloud-based management allows administrators to easily manage, configure, monitor, and update Solstice deployments. Solstice Cloud analytics provide metrics and data on an organization's meetings and monitors the health of its Solstice deployment. [Learn More](#)
- **Solstice web app:** Updated browser-based sharing allows meeting participants to share a piece of content from their device to a Solstice display from their laptop without needing to download and install an app. [Learn More](#)
- **Mersive Solstice app:** This app installed on user laptops and mobile devices enables robust sharing and management of content on the Solstice display. [Learn More](#)
- **Solstice Active Learning:** Software-enabled active routing solution for multi-team learning environments that allows presenters to control, share, and engage with learners. Features include a

simple routing space design tool, drag-and-drop video sharing between screens, and instant messaging that can broadcast information to each display on demand.

- **Solstice Discovery Service (SDS):** An IT-friendly, non-broadcast mechanism allows users to discover and click-to-connect to Solstice displays from their own devices to start sharing content. [Learn More](#)
- **Solstice Dashboard:** Windows-based on-premises-only management tool that can monitor, configure, and update Solstice Enterprise Edition Pods and Windows Software instances on a shared network. Should not be used with Solstice Pods managed in Solstice Cloud.

Deploy Solstice

Use Solstice Cloud online management to set up and manage your Solstice Pod deployment. Then deploy the Mersive Solstice app on end users devices. See the topics below to learn more about a Solstice setup and how to [deploy Solstice Pods \[5\]](#).

Key Terms

- **Solstice display:** The sharing space created by Solstice, shown on a flat panel monitor or projector connected via HDMI video cable to a Solstice Pod or Solstice Windows Display Software instance.
- **Solstice host:** Core Solstice software, running on a Solstice Pod or Solstice Windows Display.
- **User device:** Devices brought by users that can connect to a Solstice display with the [Mersive Solstice app](#) (Windows, macOS, iOS), the [Solstice web app](#) in a browser, or other app-free methods.
- **Posts:** Individual pieces of information shared to a Solstice display, including desktop, application window, browser tab, or media files.

Ways to Configure Solstice Displays

Mersive strongly recommends using the Solstice Cloud management portal, which can be accessed from any platform and location with access to the internet and offers configuration templates to define and apply common configurations to current and future Solstice Pods. Pod configuration options are:

- **Configure centrally via Solstice Cloud:** Solstice Cloud is a secure cloud-based management portal that enables the central manage a deployment of Solstice Pods from any location. With Solstice Cloud, administrators can easily deploy, configure, manage, monitor, and update Pods. Solstice Cloud also provides intuitive [analytics](#) for Solstice meetings.
- **Configure individually:** Every Solstice display can be configured via the individual configuration panel accessed from the Settings icon in the lower right corner of the Solstice welcome screen. This can be accessed physically by connecting a USB mouse and keyboard to the Pod. Or it can be accessed remotely from the same network by entering the Pod's IP address in a web browser. If the presence bar at the bottom of the Solstice screen is hidden, long-click with a mouse or press the Esc key to show the presence bar and Settings icon.
- **Configure over local network using Solstice Dashboard:** For admins who need an on-premises solution, or who are unable to use cloud-based solutions like Solstice Cloud, Solstice Dashboard is a centralized management tool installed on a local machine or server that can be used to monitor, configure, and update groups of Solstice Enterprise Edition Pods on the local network. Solstice Dashboard should not be used to configure Solstice Pods already managed in Solstice Cloud.

Centrally Deploy and Manage the Mersive Solstice App

[Centrally Deploy Mersive Solstice App on Windows with MSI](#)

[Centrally Deploy Mersive Solstice App on Windows with SCCM](#)

[Configure Mersive Solstice App Defaults on macOS](#)

Deploy Solstice with Solstice Cloud

Additional Information

Below are some topics with additional information that may help with your Solstice Cloud deployment.

- [Ethernet Network Settings](#)
- [WiFi Network Settings](#)
- [Security Settings](#)
- [Room Calendar Settings](#)
- [Digital Signage Settings](#)
- [Deployment Monitoring](#)
- [Deployment Analytics](#)

Other Resources

If you are deploying Solstice Conferencing or Solstice Active Learning, view the resources below for additional configurations needed to get these solutions up and running.

[Deploy Video Conferencing with Solstice](#)

[Solstice Active Learning](#)

Solstice Setup

The Solstice Pod leverages existing TCP/IP-based networking. Because the Solstice Pod is a network-attached device, IT administration and Network Security should be involved in designing an appropriate deployment.

Before you deploy Solstice, it is recommended that you read the information below and ensure your network meets the necessary requirements.

System Components

Physical setup and configuration of a Solstice-enabled room is straightforward. The system only requires a few components.

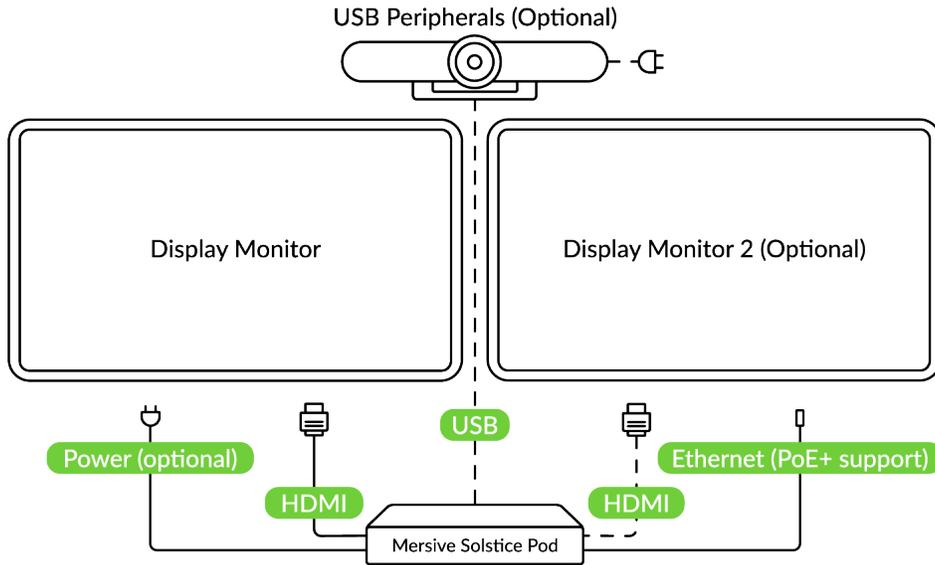
- **Solstice Pod.** The Solstice Pod is a network-attached wireless collaboration device. It provides a virtual space for wireless content sharing and collaboration and supports bring-your-own-meeting (BYOM) [video conferencing with Solstice](#). The first time a Pod running Solstice 6 or later is run out of the box (or after a factory reset), a series of guided setup screens show on the attached HDMI monitor. It walks through common settings and important checks, provides tips for resolving common issues, and points to more information to help an installer successfully deploy the Solstice Pod.



For security-conscious environments, initial configurations for a Solstice Pod can take place on a standalone network before being deployed on your enterprise network. This ensures Pods are configured to be secure before being attached to your network. However, some guided setup checks fail without internet access.

- **Display monitors.** Connect the Solstice Pod to up to two display monitors via HDMI to view content shared to the Solstice display.
- **USB room camera and/or audio devices (optional).** To turn your Solstice room into a BYOM video conferencing room with [Solstice conferencing](#), attach a USB room camera, microphone, and/or speakers to the Solstice Pod via USB.
- **User devices.** These devices are brought to the room by users attending a Solstice collaboration session and are used to share content to the Solstice display. User devices can share to the Solstice display using the Mersive Solstice app, or a variety of app-free sharing options (AirPlay, Miracast, browser-based sharing, HDMI input). Video conference hosts may also use laptop devices to share the Solstice display with a video conference.
- **Mersive Solstice app.** The Mersive Solstice app is installed on user devices and is used to share and control the Solstice display. The Mersive Solstice app can be downloaded from mersive.com/download/. It can also be deployed centrally for Windows devices using [MSI](#) or [SCCM](#) installers. For users unable to install the app on their device, multiple app-free sharing options are supported, such as AirPlay, Miracast, browser-based sharing, or wired HDMI input.
- **Ethernet (recommended).** Mersive recommends connecting your Pods to an Ethernet network for best performance. The Solstice Pod can be connected to Ethernet, a wireless network, and up to 3 VLANs simultaneously.

Sample Room Setup Diagram



Physical Setup Tips

Because the Solstice Pod does not store user credential information, unencrypted passwords, or users' data that is shared to the Solstice display, Pods do not have to be located in secure locations. However, other considerations related to theft and environmental conditions should be considered.

- Solstice supports plug-and-play USB devices. Devices, such as room cameras, should be connected to the Pod via USB and must be in-room. View list of [supported devices](#). DSPs and other processing hubs may not be compatible and should be avoided.
- Display monitors must be directly connected to a Solstice Pod through HDMI video cables to an HDMI port on the back of the Pod.



When connected to two display monitors, the Solstice Pod sends audio out over the inner HDMI port (HDMI 2). However, when a media file is shared, both ports send audio.

- Select an appropriate physical mounting solution for the Pod that cannot be detached. Consider the use of mounting locks and/or hidden VESA mounting systems behind the display. Specific mounting orientation is not an important factor as the Pod is operational in any orientation.
- Ensure that appropriate environmental controls are taken into account. The device should operate within an ambient temperature range of 0° C (32° F) to 50° C (122° F). This may require ventilation or active airflow. Never stack Solstice Pods on top of each other.
- The Pod should not be mounted in direct contact with a surface that exceeds 30° C (86° F).

Network Requirements

Solstice uses all TCP/IP standard network traffic to communicate across all the required and optional components of the Solstice system. The network(s) that Solstice is ultimately deployed on needs to allow peer-to-peer TCP connections. Additionally, for enterprise networks, firewall exceptions may need to be made and network ports may need to be open to allow certain Solstice capabilities to function.

Firewall Exceptions

URLs

You may also need to make firewall or proxy bypass exceptions for the following sites:

- Required for software updates, Solstice Cloud, default RSS feed, default digital signage feed:
 - `mersive.com`
 - `*.mersive.com`

Specific sites required for Solstice Cloud management (formerly known as Kepler):

- `kepler.mersive.com`
- `kepler-backend.mersive.com`
- `kepler-auth.mersive.com`
- `kepler-auth-svc.mersive.com`
- `kepler-onboarding.mersive.com`
- Required for pod activation, licensing, and subscription updates:
 - `kepler-backend.mersive.com` (Solstice 5.5.3 and Solstice 6+)
 - `manager.flexnetoperations.com` (Solstice 5.5.2 and lower) - Retired Aug 15 2023
- To detect captive portals, Solstice 6.0 and earlier may periodically attempt a connection to:
 - `clients3.google.com/generate_204`



Learn how to [disable captive portal checks](#) in Solstice versions 5.3 to 6.0.

Programs

Windows deployments using a tool that limits program access, like an anti-virus program, device management service, or a local firewall such as Windows Defender Firewall, may need to whitelist or allow the following program files used by the Mersive Solstice app on Windows:

- `rsusbipclient.exe`
- `SolsticeClient.exe`
- `SolsticeConference.exe`
- `SolsticeVirtualDisplay.exe` (Mersive Solstice app 5.5.2 and earlier)



Windows installers for the Mersive Solstice app version 6 and later automatically add Windows Defender Firewall exceptions for `rsusbipclient.exe` and `SolsticeClient.exe`.

If the programs are not listed, add the programs manually using the installation path of the Mersive Solstice app. Example installation paths are as follows:

- MSI & SCCM (installed with admin access from mersive.com/download/) app v5.3+ installers location:

```
C:\Program Files\Mersive Technologies, Inc\Solstice\Client
```

- MSI Solstice Conference drivers (installed with admin access from mersive.com/download/) installer location:

```
C:\Program Files\Mersive Technologies, Inc\Solstice\Solstice Conference
```

- Quick Connect app (installed with user access from v5.3–5.5.2 Solstice Pods or mersive.com/download/) location:

```
C:\Users\%username%\AppData\Local\Mersive\SolsticeClient
```

Open Network Ports

Depending on which features your end-users will use, certain network ports/routes must be open for Solstice to work correctly. Ports used for communication between a Solstice host (Pod) and Mersive Solstice user apps apply for both standard Solstice content sharing and Active Learning uses. Ports specific to Solstice conferencing video and audio sharing are identified below.

TCP

- **7:** Used for gateway check. (Feature deprecated on Pods running Solstice version 5.3.2 and later.)
- **80, 443:** Used if the Solstice host is allowed to connect to the internet for license activation and software upgrades. When pushing a local update file to the Pod, these ports need to be open between the Pod and the Dashboard. These ports are also used by the OpenControl API to interface with 3rd party systems. When network encryption is enabled, the Solstice Dashboard sends SLR updates via port 443.



If you are using a Solstice Pod or Solstice Dashboard on 4.1 or later, communication to Mersive's license server only occurs over https/port 443.

- **1337:** Used for integrating a personal Microsoft 365 calendar with the Mersive Solstice user app.
- **5443:** Used to communicate with the Solstice OpenControl API, including setting passwords for Solstice Pods.
- **6443:** Used for browser-based sharing connections.
- **7236:** Miracast WiFi Direct control port used to establish and manage sessions between the source device and the Pod.
- **7250:** Port on which the Pod listens for Miracast packets when Over Existing Network mode is enabled.
- **6000–7000, 7100, 47000, 47010:** Should allow inbound AirPlay® traffic to the Solstice host.
- **53100, 53101, 53102:** Used by default for basic communications between the Solstice host and end user devices, as well as Solstice Dashboard management. The base port (53100 by default) can be changed in the [Network Settings](#) of the Pod's local configuration panel or Solstice Dashboard.



Changing the Solstice base port for a Pod also changes the sequential streaming port (Solstice base port +1) and notification port (Solstice base port +2) used by Solstice. You must ensure that all three ports are opened on your network.

- **53103–53106, 53118, 53119:** Used by Solstice video conferencing functions in addition to the default base ports 53100–53102.
 - TCP ports used for Windows devices: 53103, 53104, 53118, 53119.
 - TCP ports used for macOS devices: 53105, 53106.

i Changing the Solstice base port for a Pod also sequentially changes the ports Solstice uses to connect to video conferences. For example, if you change the configured Solstice base port to 53101, the ports used by the Solstice Conference drivers change to 53204–53220.

- **53200, 53201, 53202:** Used by the Solstice host and end user devices to communicate the Solstice Discovery Service (SDS) host if SDS discovery mode is enabled.

📄 Browser-based sharing can use any non-privileged TCP port from 1024 to 65535. (Also see UDP port usage for browser-based sharing.)

UDP

- **123:** Used to communicate with an NTP server.
- **5353:** Required for iOS mirroring via the Bonjour protocol. It is not required when using the Solstice Bonjour Proxy. Also, if Miracast Over Existing Network mode is enabled, this port is used for multicast DNS (mDNS). mDNS is broadcast to the local subnet of each network interface the Pod is connected to. If the computer that is attempting to make an infrastructure connection is on a different subnet, this broadcast fails. If this happens, a workaround is to create a DNS entry to the Pod’s hostname.
- **6000–7000, 7011:** Should allow inbound AirPlay® traffic to the Solstice host.
- **53107–53117:** Used in Solstice video conference integration for audio and video routing. The base port (53100 by default) may be changed in the of the Pod’s local configuration panel or Solstice Dashboard.

📄 Important note: Changing the Solstice base port for a Pod also sequentially changes the ports used to share Solstice to a video conference. For example, if you change the configured Solstice base port to 53101, the video conference integration ports changes to 53208–53218.

For Solstice version 5.5 and later, see the table for more about UDP ports used by the Mersive Solstice app (client) and Solstice Pod (server) to connect Solstice to a video conference. Ephemeral source ports may be any port in the 1024–65535 range.

Client OS	Client Port	Server Port	User For
macOS	Ephemeral	53107	Video conference microphone audio
macOS	Ephemeral	53108	Video conference speaker audio
Windows	53110	Ephemeral	Video conference camera video
Windows	Ephemeral	53111	Video conference camera RTCP
Windows	53112	53112	Video conference microphone audio
Windows	53113	Ephemeral	Video conference microphone RTCP
Windows	Ephemeral	53114	Video conference microphone RTCP
Windows	Ephemeral	53115	Video conference speaker audio
Windows	Ephemeral	53116	Video conference speaker RTCP

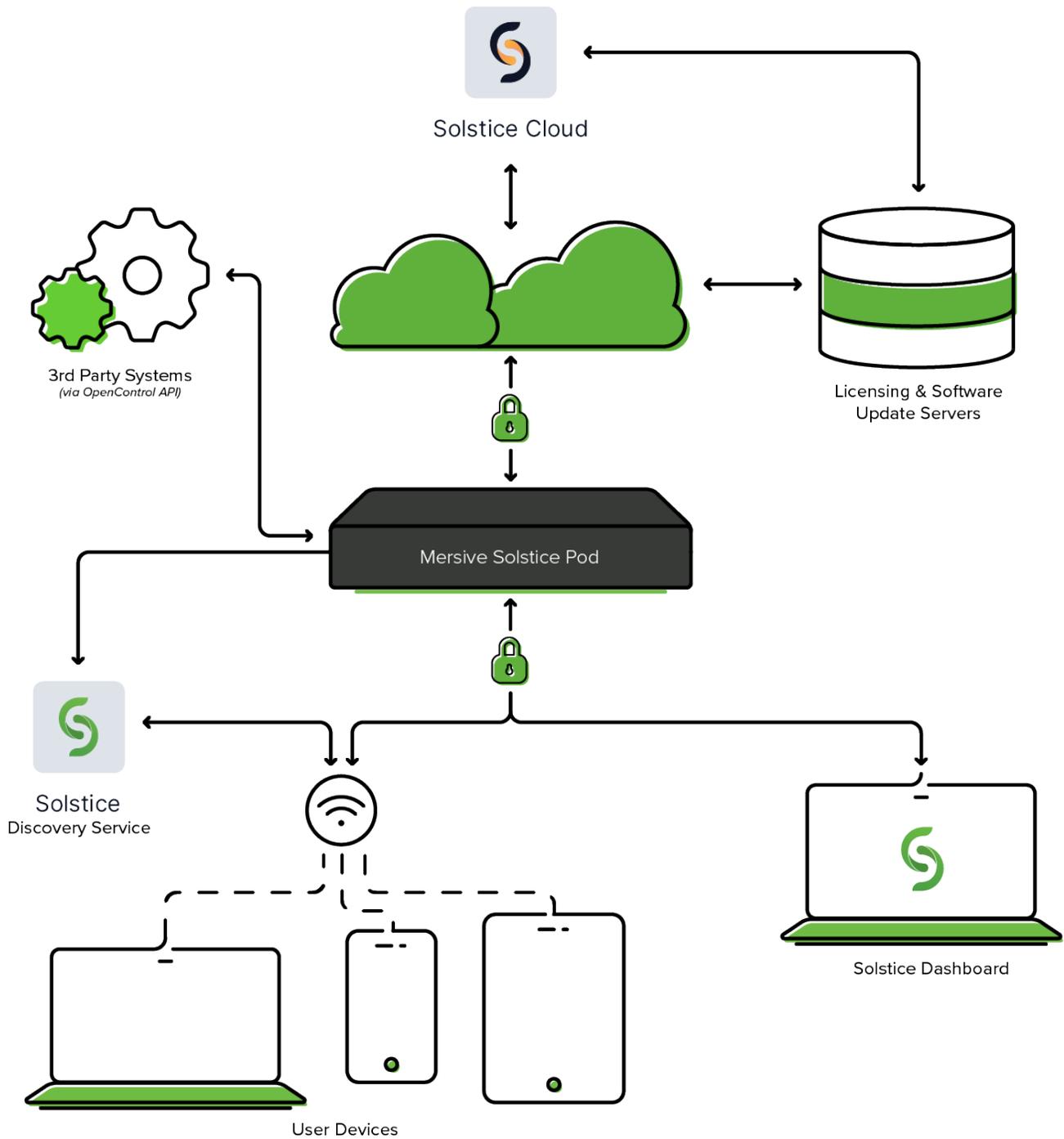
Client OS	Client Port	Server Port	User For
Windows	53117	Ephemeral	Video conference speaker RTCP

- **55001:** Used for display discovery if broadcast discovery mode is enabled.



Both Miracast and browser-based sharing capabilities can use any non-privileged UDP port from 1024 to 65535. (Also see TCP port usage for browser-based sharing.)

Network Diagram



Step 1: Import Pods to Solstice Cloud

Solstice Cloud is a secure cloud-based management and analytics portal that allows administrators to easily configure, monitor, and update their Solstice deployment. After your Solstice Pods have been imported into Solstice Cloud, you can create unlimited configuration templates for network settings, security settings, appearance settings, and more to apply across your Solstice deployment.

Before beginning the process outlined below, connect all your Solstice Pods to a network with Ethernet, and check that the network can access Solstice Cloud at cloud.mersive.com.

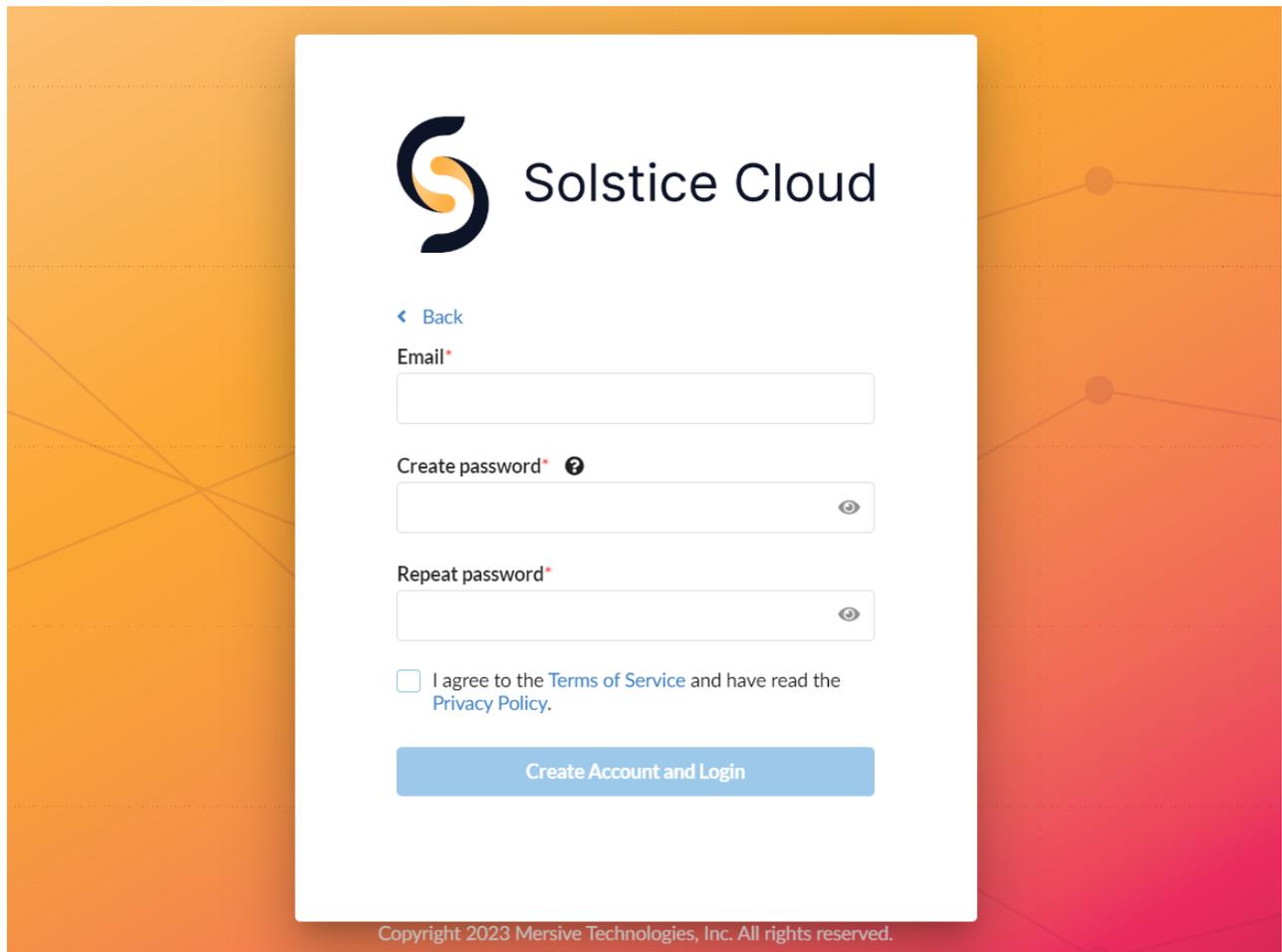
Create a Solstice Cloud Organization

Your organization can quickly start using Solstice Cloud at any time by first creating a Solstice Cloud organization, then onboarding your Solstice Pods into the Solstice Cloud management portal from the new Solstice Deploy app. Mersive recommends creating your Solstice Cloud organization using the email address for the person who will be the main Solstice Cloud administrator for the new Solstice deployment. This will be your organization's main administrator account for Solstice Cloud management.

The initial Solstice Cloud administrator account can then invite other users to join Solstice Cloud management for your organization in a variety of user roles. Inviting any additional users from the master account allows those users to access the same set of Pods and data for your organization. For more information, see [Manage Users and Roles in Solstice Cloud](#).

To create the new Solstice Cloud organization:

1. Go to the Solstice Cloud organization creation page at cloud.mersive.com/create-org.



2. Enter a valid **Email** that is not currently registered in Solstice Cloud management. This will be used for the initial administrator account for the new Solstice Cloud organization.

Double check the entered email address for typos. A mistyped email address for this account may make the new organization inaccessible without support from Mersive.

3. Enter a password in **Create password**. then enter it again in **Repeat password**.

The entered passwords must be the same, and must meet the password rules listed by hovering over the  icon above the first password box.

4. Check the box to agree to the Terms of Service and Privacy Policy, then click **Create Account and Login**.

- a. If the entered passwords do not match each other, or do not meet the Solstice Cloud password rules, a new Solstice Cloud organization cannot be created. Fix the highlighted issue and try again.
- b. If the email address entered already has a Solstice Cloud account, you will be directed to instead log in to Solstice Cloud with your existing account.

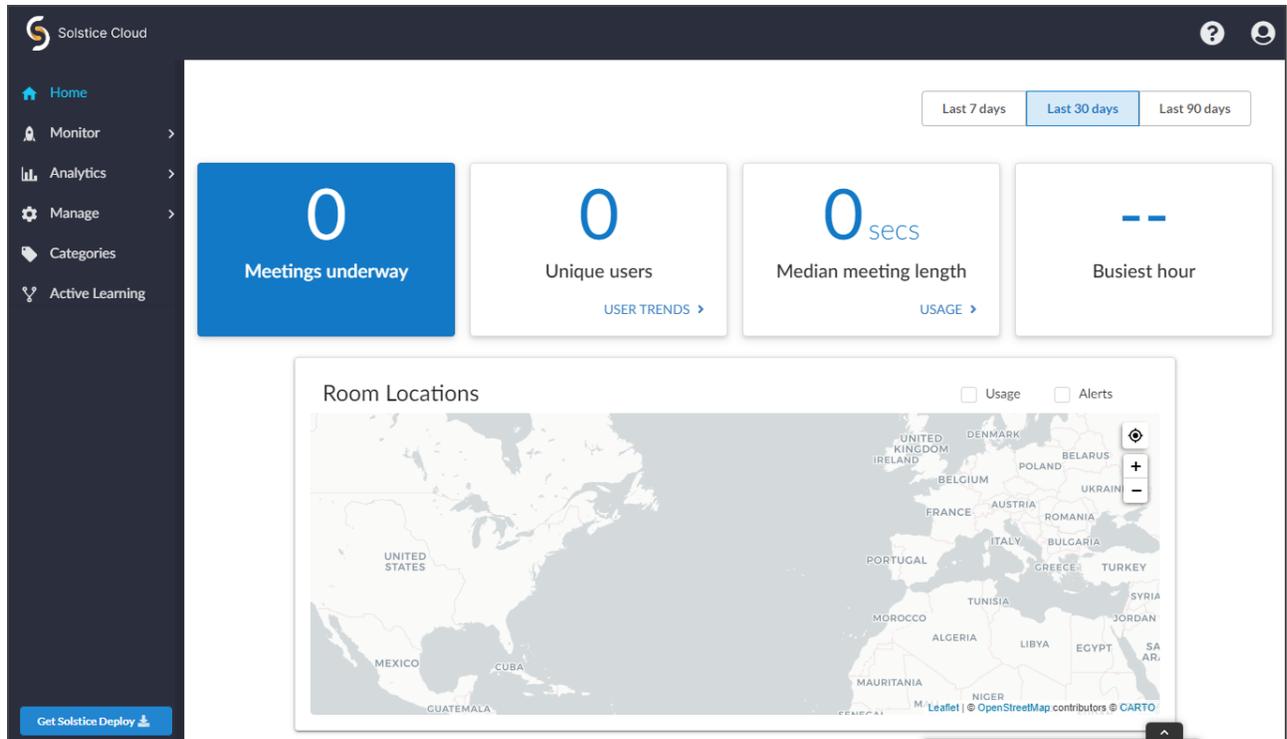
5. If the process is successful, you will be logged in to the new Solstice Cloud organization with your new Admin account.

- Continue to the next section to onboard Pods with the Solstice Deploy app.

Get Solstice Deploy and Add Pods to Solstice Cloud

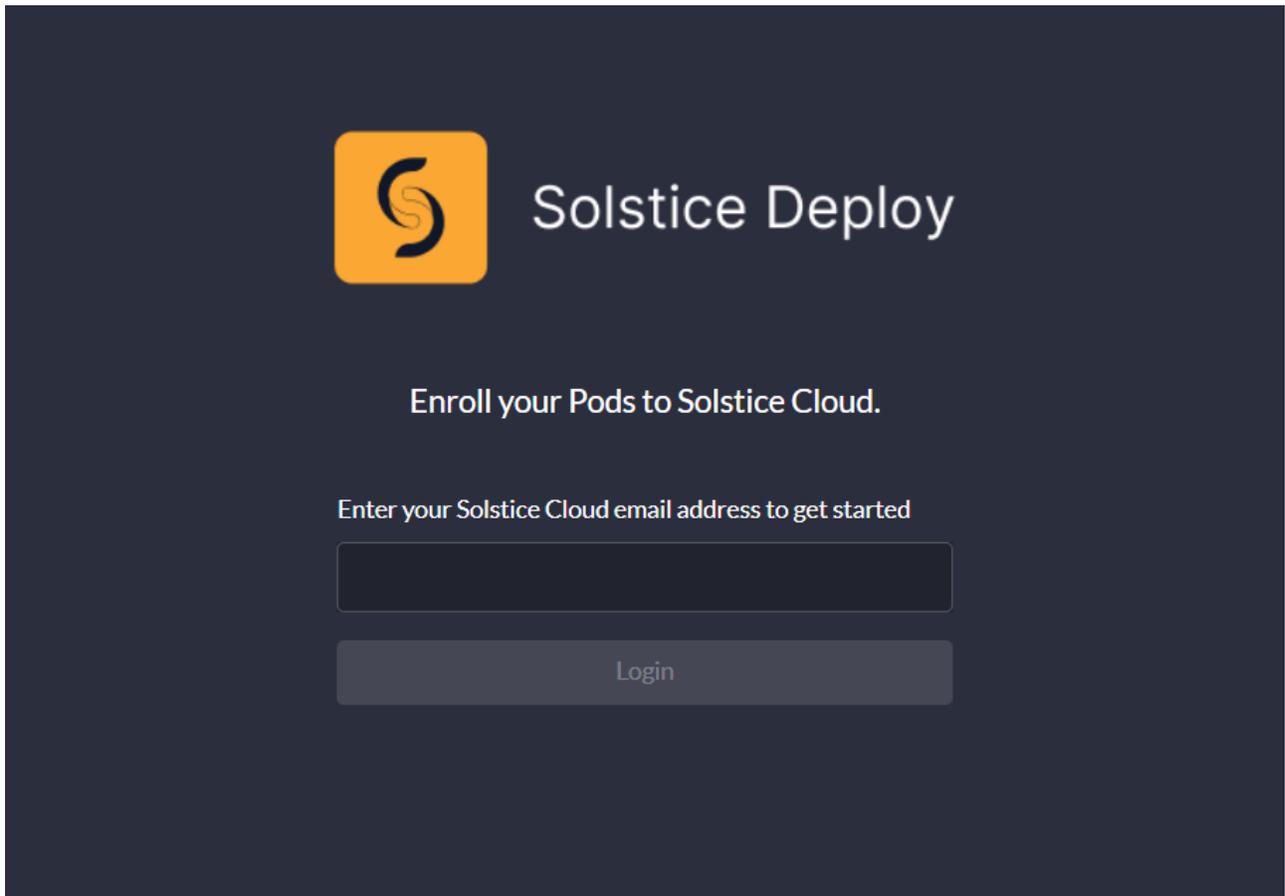
After you have a Solstice Cloud organization and main administrator account, you are ready to start adding Solstice Pods to be centrally managed in Solstice Cloud. Administrators can download the Solstice Deploy app for Windows or macOS from the Solstice Cloud portal.

- Go to cloud.mersive.com and log in to Solstice Cloud with an Admin level account. The Solstice Cloud home page appears.



- Select **Get Solstice Deploy** in the lower left.

3. Run the downloaded file (e.g., `solsticedeploy-latest.exe`) to install Solstice Deploy on your Windows or macOS computer. The Deploy app starts after the installation is complete.



Before proceeding to the remaining steps, check that you are ready to onboard Solstice Pods to Solstice Cloud: 1) Solstice Pods must be connected to a network via Ethernet with access to the internet. 2) The device running the Deploy app must be connected to the same network and able to communicate with the Pods.

4. In the Deploy app, enter the email address of a Solstice Cloud administrator account, then click **Login**.
5. Enter the password for this admin account and **Login with password**.
6. There are two ways to select the Solstice Pods on your network to be added to Solstice Cloud. Select **Find Pods** to have the Deploy app search the network for Pods to be added to Solstice Cloud.
 - a. Use the following **Advanced Settings** as appropriate:
 - Enter an **Admin password** to find Solstice Pods with that password configured.
 - If your organization is using SDS for Solstice Pod discovery, enter the **Solstice Discovery Service** host IP address to help find Solstice Pods.
 - b. A search results table appears, and Pods that are 1) found on the attached network and 2) aren't yet in Solstice Cloud appears. Some Pods may take longer to appear in the list than others.
 - c. After the list is complete, select the Pods from the list you want to add to Solstice Cloud.
7. Or to use a list of IP addresses to select Solstice Pods to be added to Solstice Cloud management, use the **Enter Pods Manually** option.

- a. Enter a comma-separated list of IP addresses for Solstice Pods you want to add to Solstice Cloud. (Copying and pasting is strongly recommended.)
 - b. If the listed Pod(s) have an admin password configured, enter it in **Admin password**.
8. After you have designated which Solstice Pods to add to Solstice Cloud using one of the above options, there are two different ways to add the Pods into Solstice Cloud:
- Select **Enroll Pods** to add the listed Solstice Pods in Solstice Cloud without any settings template assignments.
 - Or select **Apply default templates and enroll Pods** to assign predefined default templates to the listed Solstice Pods as they are added into Solstice Cloud management (for Pods running Solstice 5.0+). Click **Yes, I'm sure** to confirm this option.

 Applying default templates overwrites previous Pod configurations, and previous settings will be lost. If any listed Pods have configurations to save, do not apply default templates.

 Default template settings should be configured in Solstice Cloud before applying them to Solstice Pods. Learn more about [Templates in Solstice Cloud](#).

9. A progress bar appears for each Solstice Pod being added into Solstice Cloud. This process can take some time, depending on the number and type of Pods being onboarded and whether default templates are being applied.
10. When Deploy has finished trying to onboard all listed Solstice Pods, a results summary appears.
- Each summary bar can be expanded to show details for Pods in that category (enrolled or failed). Failure details are provided for Pods that failed the enrollment process.
11. Solstice Pods that were successfully enrolled now appear and can be managed in Solstice Cloud.

Step 2: Configure Templates

Solstice Cloud allows administrators to create unlimited configuration templates to apply across their Solstice deployment. This step will acquaint you with the options for creating configuration templates, which can then be used to quickly and easily apply a common set of options to multiple Solstice Pods in your deployment. The following deployment steps will then guide you through using templates to set the recommended base configurations for quickly deploying Solstice for your organization. For a full list of templates options, see [Configuration Templates](#).

Use any or all of the following methods to configure templates for a wide variety of configuration options that can be applied to Solstice Pods across your deployment:

- **Define the Default template** - Mersive recommends this option if all the Solstice Pods in your organization use the same settings within a configuration category.
- **Create a new template** - If groups of Pods within your deployment need different settings based on location, purpose, or other criteria, create a new template for each configuration needed with a descriptive name based on its purpose (for example, "London Office" for time/locale settings).
- **Duplicate a template** - If only minor changes are needed between sets of configuration options, you can duplicate the most similar existing template and quickly update only those settings that need to be changed.

See the step-by-step directions below for each of these options.

Define the Default Template

Each required Solstice Cloud configuration category contains one *Default* template. Mersive recommends configuring this template with the most common set of configuration options for the Solstice Pods in your organization's deployment. Then use the [Duplicate a Template \[19\]](#) option to create variations of the template for groups of Pods that use different configuration options.

- For example, use the default Time/Locale template to configure the time zone for Pods in the main office, then duplicate the template and modify the duplicates for Pods located in other time zones.
1. In the left sidebar menu of Solstice Cloud, click **Manage > Templates**.
 2. From the list of configuration categories that appears below Templates, select the category to configure.
 3. Click the first template in the list, named **Default**, to see the available configuration options.
 4. Configure the default settings as appropriate for the majority of Solstice Pods in your deployment.
 5. Click **Save**. A green box confirming that the template was updated will briefly appear.

Create a New Template

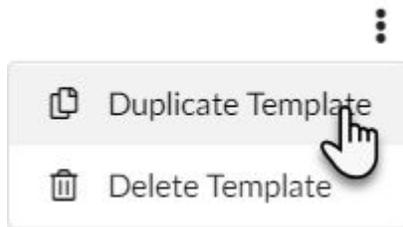
1. In the left sidebar menu of Solstice Cloud, click **Manage > Templates**. A list of available configuration templates appears in the sidebar.
2. From the list of configuration categories that appears below Templates, select the category to configure.
3. Click **Create New Template**.

4. Enter a descriptive **Template Name**. For example, you could name the template by location (London Office) or appearance (Mountain Theme), as appropriate for its purpose.
5. Configure the settings to be applied to the Solstice Pods using this template.
6. Click **Save**.

 Most settings can be configured collectively in templates, but you may occasionally see settings or values labeled "Unique to Pod" that need to be set for each Pod individually. See [Apply a Template to Pods](#) for details.

Duplicate a Template

1. In the left sidebar menu of Solstice Cloud, click **Manage > Templates**.
2. From the list of configuration categories that appears below Templates, select the category to configure.
3. For the template to duplicate, click the vertical ellipsis  icon, then select **Duplicate Template**.



4. Give the duplicated template a descriptive **Template Name**, ideally related to its purpose, and change the configuration settings as needed.
5. Click **Save**.

Step 3: Rename and Customize a Pod

This and the following setup steps guide you through setting the recommended base configuration templates in Solstice Cloud to quickly deploy Solstice based on your organization's needs and IT security policies. For the network settings appropriate to your organization's deployment, consult with your IT or network team. For a full list of templates and configuration options, see [Configuration Templates](#).

Rename a Solstice Pod for Its Location

Mersive recommends assigning Pods names that correspond with the location or room the Pod is in, such as North Conference Room, to help meeting participants easily identify the appropriate Solstice Pod display for their location.

1. To change the name of a Pod in Solstice Cloud, use the left sidebar menu to navigate to either **Manage > Pods** or **Manage > Location**.
2. In the Pods table that appears, find the Pod you want to rename and click the link in the Name column. The Pod's Configuration Settings page opens.



If you manage a large number of Pods, you can reduce the number of Pods displayed in the table by entering all or part of the Pod's name in the search box, or by setting a filter.

3. In the box that shows the Pod's identifying details, enter a **Pod Name** in the text box that corresponds with the location or room the Pod is in.
4. Click **Save**.

Appearance Settings in Welcome Screen Template

To make it easy for users to discover and connect to the right Solstice display, Mersive recommends renaming the Pod to correspond to the meeting room or space it will be installed in. You can also change the appearance of the Solstice display's welcome screen to match your organization's branding by updating the display's background images, adding customized connection instructions, changing the text color, and more. For more Welcome Screen settings, see the [Welcome Screen Template](#).

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Welcome Screen**.
2. Either open the **Default** template, or click **Create New Welcome Screen Template** and enter a descriptive **Template Name**.
3. To change background images, click on the upload icon for that background image. Then browse to the image file and select.
4. To disable background images from the rotating display, uncheck the box in the lower right corner of the background image preview.
5. To customize the connection instructions that display on the welcome screen, go to the **Instructions** list and select how you want the connection instructions to appear on the Welcome Screen for end-users.
 - **Default:** This setting uses Solstice's default connection instructions.
 - **Show custom instructions:** Allows you to create custom instructions for meeting attendees to see on the Welcome Screen.

6. If you selected the **Show custom instructions** option, a rich text field appears below, allowing you to enter and format custom connection instructions.

 You can include responsive variables, which will be automatically replaced with Pod-specific information, in your custom instructions. Available variables are [RoomName], [ScreenKey], [WifiNetworkName], [WifiIP], [EthNetworkName], and [EthIP]. Note that variables are case sensitive.

You can use the following as a starting point for your custom instructions:

To get started:

1. Browse to `share.mersive.com`
2. Enter [EthIP] or [WifiIP]
3. Enter the Screen Key [ScreenKey] and connect
4. Share content to this screen!

7. If you are not enabling sharing Apple device screens via AirPlay, hide the AirPlay instructions by unchecking **Show AirPlay instruction line**.
8. If you are not enabling sharing Windows device screens via Miracast, hide the Miracast instructions by unchecking **Show Miracast instruction line**.
9. Click **Save**.

System Settings in Time/Locale Template

The Time/Locale template allows you to set various system preferences that affect the appearance of your Solstice Pod displays, including timezone and language settings.

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Time/Locale**.
2. Either open the **Default** template, or click **Create New Time/Locale Template** and enter a descriptive **Template Name**.
3. To set the date and time using a time server, check **Set date/time automatically** and enter the time server URL in the corresponding field (the default timeserver URL is `pool.ntp.org`).
4. If you want the time to appear in 24 hour format (4:00 pm displays as 16:00), select **24 hour format**.
5. From the **Timezone** list, select the timezone the Pod is in (for example, Eastern Time).
6. From the **Language** list, select the language you want to appear on the Pod.
7. Click **Save**.

Step 4: Network and Base Security Settings

Mersive recommends setting up templates with the following network and security configurations for your Solstice Pod displays. These settings will allow users to quickly connect and share content to the displays in Pod-enabled rooms while still maintaining network security standards for larger, centrally-managed Pod deployments. Small deployments, collaboration hotspots, and open-to-public use of Solstice Pods are also perfectly valid.

IT administration and Network Security should be involved in designing an appropriate deployment, and deployments can differ based on network configuration specifics and policies. Ensure you have reviewed the [Network Requirements \[8\]](#). For additional security configurations, see the [Security Template](#).

Base Network and Security Settings in Ethernet Template

Solstice is designed to leverage existing Ethernet networks to support collaboration in meeting rooms and learning spaces. Mersive recommends connecting your Pod to Ethernet for best performance.

These steps outline how to configure basic Ethernet network settings to apply across your deployment. For more about advanced Ethernet settings, see the [Ethernet Template](#).

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Ethernet**.
2. Either open the **Default** template, or click **Create New Ethernet Template** and enter a descriptive **Template Name**.
3. To activate the options, select the **Enable Ethernet** checkbox.
4. Change the **Network Name** to the one that users will see in the list of available networks on their device so that it is easily recognizable.
5. To allow admin access to make configuration changes on this network, select the **Allow administrative configuration access** checkbox.
6. Select either **DHCP** for the Pod to be dynamically assigned an IP address, or select **Static IP** to enter your network configuration manually.
7. If you selected Static IP, enter the **Gateway**, **Network Prefix Length**, and **DNS 1** fields. Because it is unique to each Pod, you will enter the IP Address after this template is applied to a Pod.



Note that the IP Address is unique to each Pod and needs to be configured for every Pod. After this template is applied to your Pods, you will be prompted to enter this information for each Pod the template is applied to. Also see [Step 8: Apply Unique-to-Pod Settings \[33\]](#).

8. Click **Save**.

Base Network and Security Settings in WiFi Template

Solstice is designed to securely leverage a wireless network connection that can be applied as Solstice's only network connection, or in dual-network mode alongside a wired Ethernet connection.

These steps outline how to configure basic WiFi network settings to apply across your deployment. There are two options outlined below:

1. Attaching the Pod to a wireless network
2. Disabling WAP mode

If you are not attaching the Pod to a wireless network, Mersive strongly recommends following the steps for Option 2 below to [disable WAP mode \[23\]](#). For more about advanced WiFi settings, see [Solstice Cloud: WiFi Template](#).

Option 1. Attach the Pod to a Wireless Network

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > WiFi**.
2. Either open the **Default** template, or click **Create New WiFi Template** and enter a descriptive **Template Name**.
3. Select the **Enable WiFi** checkbox.
4. To allow admin access to make configuration changes on this network, select the **Allow admin configuration access** checkbox.
5. Select **Existing Network**. This option connects the Pod to an existing network wirelessly.
6. Enter the network name in the **SSID** field.
7. In the **Security Type** list, choose the appropriate option: **Open, WEP, WPA/WPA2, or 802.1x EAP**.



If you chose **802.1x EAP**, see [Solstice Cloud: WiFi Template](#) for more information on this configuration.

8. If prompted, enter the **Password** for this network.
9. Select either **DHCP** for the Pod to be dynamically assigned an IP address, or select **Static IP** to enter your network configuration manually.
10. If you selected Static IP, enter the **Gateway, Network Prefix Length** and **DNS 1** fields.



Note that the IP Address and DNS Hostname are unique to each Pod and need to be configured for every Pod. After this template is applied to your Pods, you will be prompted to enter this information for each Pod the template is applied to. Also see [Step 8: Apply Unique-to-Pod Settings \[33\]](#).

11. Click **Save**.

Option 2. Disable WAP (Wireless Access Point) Mode

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > WiFi**.
2. Either open the **Default** template, or click **Create New WiFi Template** and enter a descriptive **Template Name**.
3. Uncheck the **Enable WiFi** checkbox.
4. Click **Save**.

Base Security Settings in Security Template

Before deploying your Solstice Pods, certain security baselines should be configured to harden the security of your deployment. The following are the base security settings that Mersive recommends. For more about advanced Security settings, see [Solstice Cloud: Security Template](#).

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Security**.
2. Either open the **Default** template, or click **Create New Security Template** and enter a descriptive **Template Name**.
3. To set an admin password to protect your Solstice Pod configurations, enter the password to require for Pod configuration in **Set Admin Password**. To set the same administrator password for all of your Pods (recommended), apply this Security template to all your organization's Pods in Manage > Pods.
4. To enforce password validation rules (8-character minimum, one uppercase and one lowercase character, one number or special character), select **Enforce password validation rules**.
5. If you do not wish to allow access to a Pod's configuration settings by physically connecting a keyboard and mouse to it, uncheck **Allow local configuration**. Note that the admin password set above is required for this configuration method.
6. Ensure **Enable encryption for Solstice traffic** is selected.
7. To upload a custom TLS certificate to be used instead of the Pod's default self-signed certificate, click the **Upload Certificate** button, then browse to and select the certificate file.
8. Click **Save**.

Base Security Settings in Features Template

This template contains the option to require meeting participants to enter screen key when connecting to Solstice collaboration sessions for added security. You will also use this template for additional configuration in [Step 7: Set Content Sharing Options \[31\]](#). For more about advanced Features settings, see [Solstice Cloud: Features Template](#).

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Features**.
2. Either open the **Default** template, or click **Create New Features Template** and enter a descriptive **Template Name**.
3. Under the Solstice Feature Options section, select **Enable screen key**. This is an important security setting that requires end-users to enter the 4-digit screen key visible on the display to connect and share to Solstice.
4. Click **Save**.

Step 5: Add a Room Calendar

Solstice offers the option to show the schedule and calendar information for the room on a Solstice display when there is no other content being shared. Participants can see if the space is currently scheduled or available, as well as the next three upcoming meetings in the space.

Use the following options to integrate room calendars with your Solstice displays. For more details about room calendar integration settings for each calendar type, see [Solstice Cloud: Calendar Template](#).

Room Calendar Settings in Calendar Template

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Calendar**.
2. Click **Create New Calendar Template**.
3. Enter a descriptive **Template Name**.
4. Select the **Enable Calendar Feature** checkbox.
5. From the **Calendar Type** list, select the type of calendar you are integrating for the room. You will need to provide the following information for each option:
 - **Microsoft Exchange** - Enter the Microsoft Exchange **Server URL** for the room calendar account, select whether your Exchange server uses Basic or NTLM as an **Authentication Type**, and enter the information needed for that authentication type as prompted. If the account uses either an **Impersonation** or **Delegation** mailbox, select the appropriate option.
 - **Office 365 Online** - Select the **Authentication Type** for the room calendar's Microsoft 365 account and enter the information needed for that authentication type as prompted. If the account uses either an **Impersonation** or **Delegation** mailbox, select the appropriate option.

 Mersive strongly recommends using Microsoft's Modern (OAuth2) authentication type, as Microsoft began disabling its Basic authentication in 2021.

 - **Google Calendar** - **Upload service account credentials**, such as a JSON key, for the Google Workspace service account associated with the Pod's room calendar.
 - **3rd Party Only** - Only select this option if you are using [Solstice's OpenControl API](#) to integrate a third-party calendar. See [Calendar API](#) for configuration options.

 Authentication information for room calendar accounts, such as **Username**, **Password**, or **Room Email**, will need to be entered individually for each Pod. Steps for doing so are covered in [Step 8: Apply Templates and Unique-to-Pod Settings \[33\]](#).
6. To hide meeting titles or meeting organizers from being visible on the room display, uncheck **Show meeting titles** and/or **Show meeting organizers**.
7. Select the desired **Update Interval** frequency to set how often Pods will update the calendar meeting information visible on the display.
8. Click **Save**.



For Solstice 5.5 and earlier to auto-launch a scheduled video conference from the link in the body of a Microsoft 365 meeting invitation, the Microsoft Exchange server setting `DeleteComments` must be changed to `false` for the room's Exchange or 365 mailbox account. When set to `true` (default), the body of incoming meeting requests is removed, and the video conference cannot be auto-launched. For details on this Microsoft server setting, see the [Microsoft documentation](#).

For more on room calendar functionality in versions 5.5.1 and later of the Mersive Solstice app, see the .

Step 6: Set Up Display Discovery

Display discovery refers to the ability for a user to "discover" what Solstice Pod displays are available to connect to without knowing the Pod's IP address. By default, Solstice uses UDP broadcast packets to enable discovery. Broadcast discovery is recommended only for single network configurations that do not use a switch and that allow UDP broadcast traffic. Mersive strongly recommends utilizing Solstice Discovery Service (SDS), especially if broadcast discovery needs to be disabled.

SDS is a lightweight network application for display discovery and only requires a simple, one-time setup. SDS populates a user's Solstice app with a list of Pod displays available on the network, allowing them to simply click to connect. Network administrators can also configure DNS resolution on their networks to work with SDS, allowing users to enter a Pod's domain name rather than its IP address to connect. For more information on how to implement and configure SDS, see [Solstice Discovery Service \(SDS\)](#).

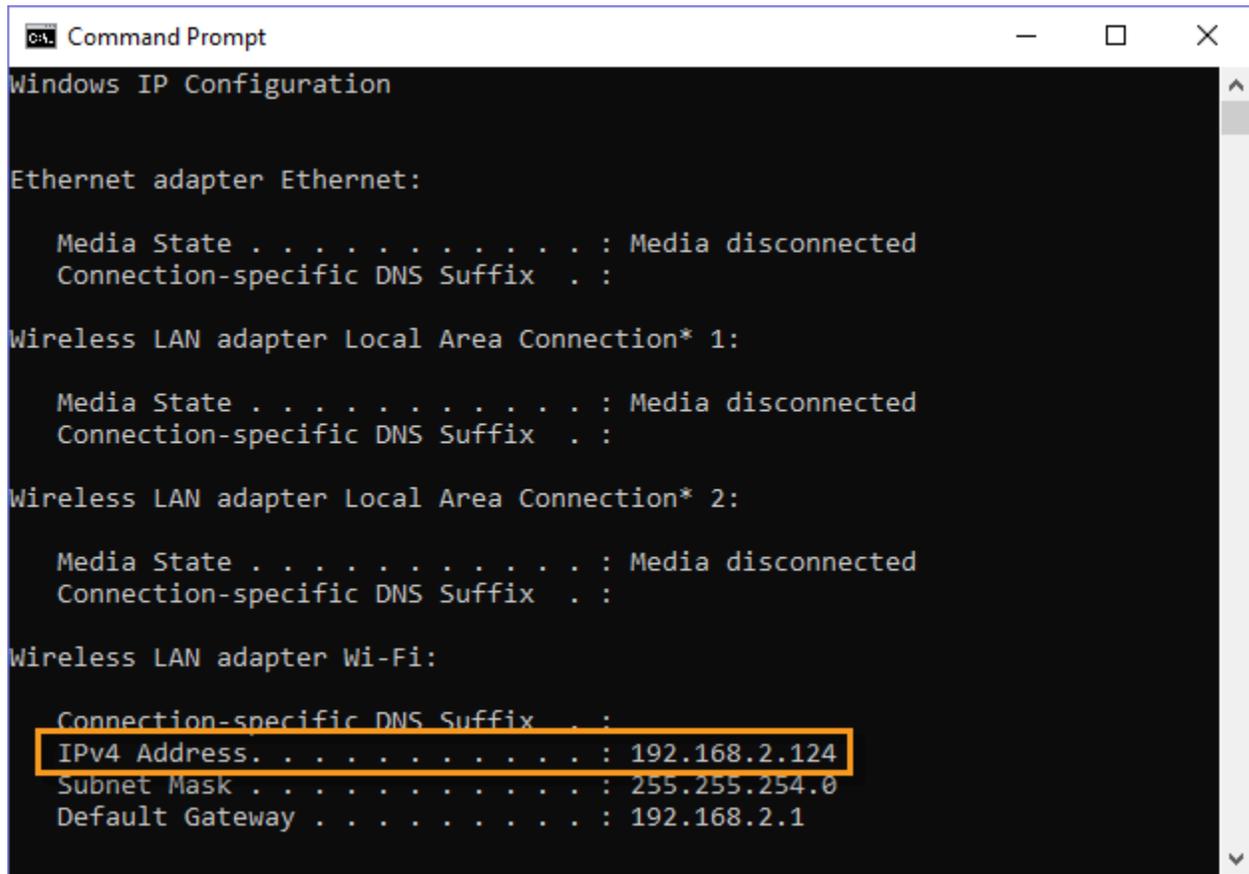
1- Download and Install SDS

1. Visit mersive.com/download/get-sds/.
2. Under **Newest Version (recommended)**, click the link for the latest version of SDS. The installer will be downloaded.
3. Run the SolsticeDiscoveryServiceSetup_[version_number].exe installer on the Windows host machine or Windows server and step through the InstallShield wizard until SDS is installed.

2 - Find the IP Address of the SDS Host

If you already know the static IP address of the Windows machine with SDS installed, move on to step 3 below.

To find your IP address, open a Command Prompt window, type **ipconfig**, and hit Enter. The IP address is listed in the results that appear.



3 - Create a Discovery Template in Solstice Cloud

Creating a Discovery template allows you to easily configure SDS for all of your Solstice Pods managed in Solstice Cloud.

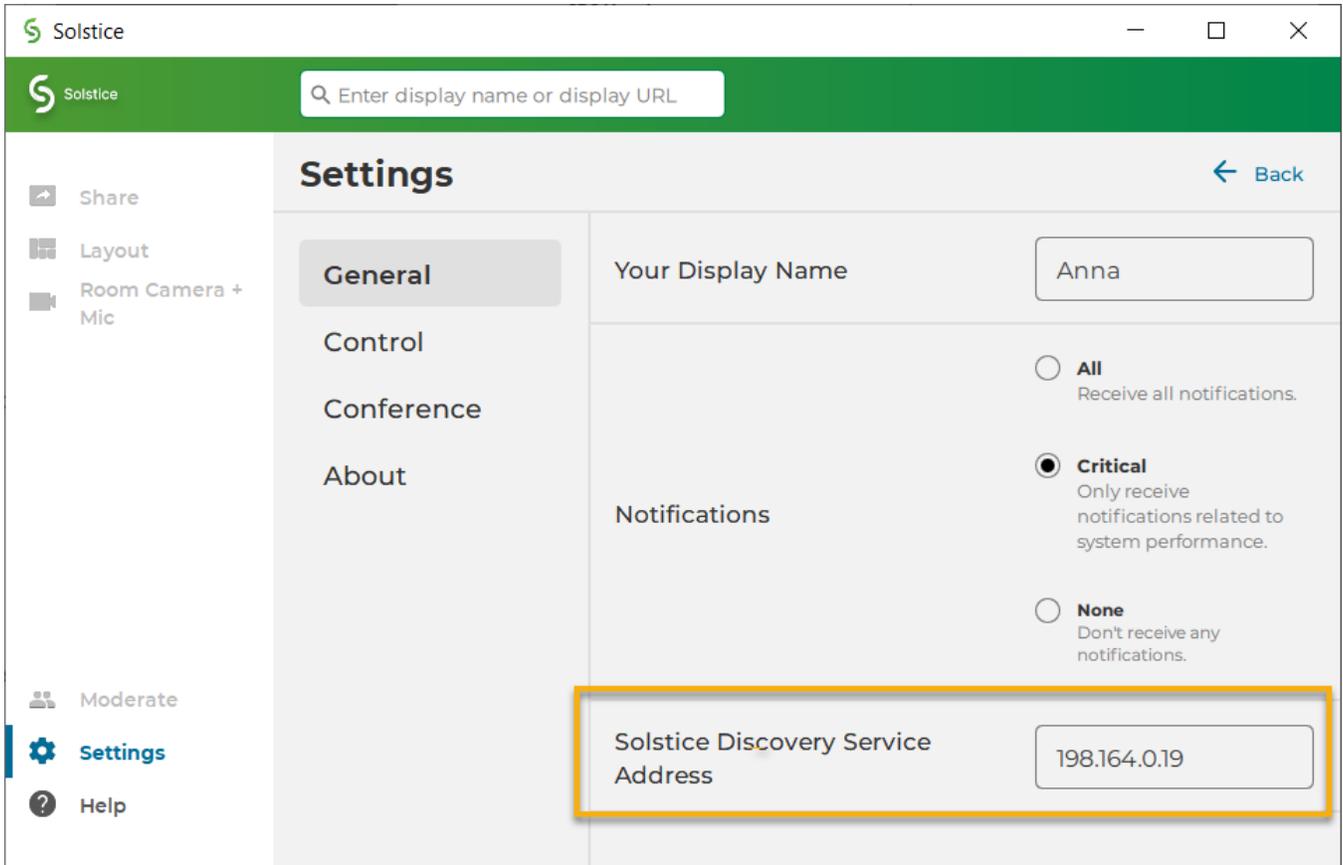
1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Discovery**.
2. Either open the **Default** template, or click **Create New Discovery Template** and enter a descriptive **Template Name**.
3. Uncheck **Broadcast display name on network** and ensure that **List display to SDS** is checked.
4. In the **SDS Host 1** field, enter the SDS host machine's IP address.

 A second SDS host can be listed for Solstice displays that are attached to two networks using Solstice's dual-network capability. Displays attached to two networks will require an SDS host machine on each network to use SDS (order does not matter).

5. Click **Save**.

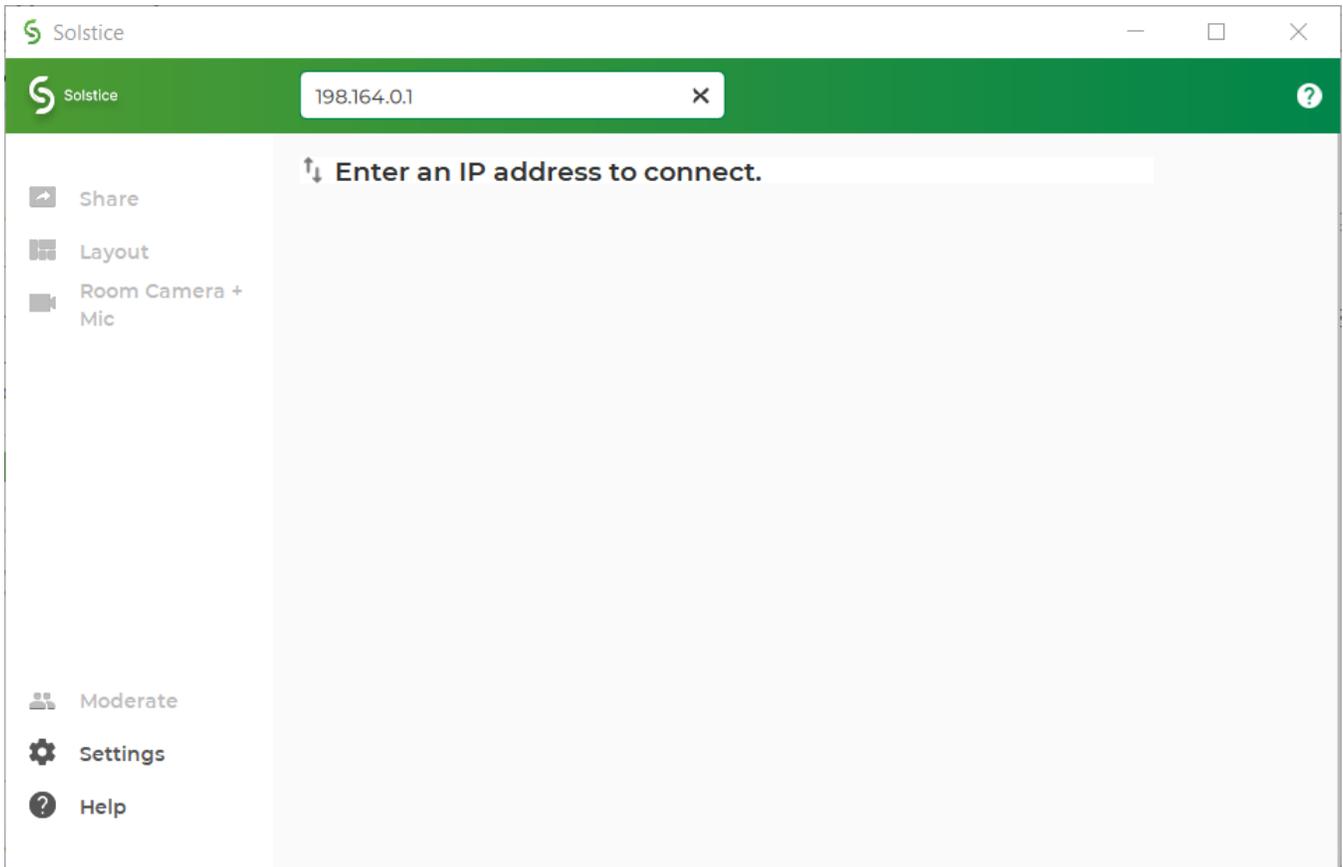
4 - Set SDS Host in Solstice User Apps

For users to see Solstice displays listed in the SDS directory, each user will need to do a one-time configuration to enter the SDS host IP address in their Solstice app's Settings. After entering the SDS host, the user can see Solstice displays available for connection every time they open the app.



If centrally deploying the app to end-users using MSI or SCCM, SDS information can be pre-configured during the installation process. Learn more about [MSI](#) and [SCCM](#) installations.

Alternatively, if you have already applied SDS information to your Solstice Pods and displays, as described in step 3 above, SDS will be automatically configured in a user's app when they connect to one of these displays by entering the display's URL in the app's search bar.



SDS Requirements

- Solstice Discovery Service must be installed on a Windows machine with a static IP address running Windows 8 or 10, or a Windows Server running 2012 R2 or later, and a quad core processor with a minimum of 12GB RAM. A Windows 2016 Server may be used if desktop experience is enabled.

Step 7: Set Content Sharing Options

Meeting participants connected to a Solstice display with a laptop computer can share three basic kinds of content through the Mersive Solstice app: their whole desktop, a specific application window, or media files such as still images and videos. Screen mirroring for iOS mobile devices is available through the Solstice mobile app. Miracast and AirPlay support also provide the ability mirror the screens of Windows, macOS/iOS, and some Android devices without the Solstice app. For more information on how to configure Solstice to support sharing with AirPlay and Miracast, see [Enable Sharing with AirPlay](#) and [Enable Sharing with Miracast](#).

Video conferencing with Solstice can also be enabled, allowing meeting hosts to share the shared Solstice display workspace as well as room audio and video resources with meeting participants connected via a video conference application (Zoom, Teams, etc.) on the meeting host's laptop.

Content Sharing Settings in Features Template

These settings determine which sharing options users can use to share content to the Solstice display. For details about using this template to enable the screen key option for added security in Solstice collaboration sessions, see [Step 4: Network and Base Security Settings \[22\]](#).

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Features**.
2. Click either the *Default* template or the template you created in Step 3: Set the Base Security Settings to enable the screen key.
3. Under the Solstice Feature Options section, enable or disable the various sharing options based on your organization's needs and policies.
 - **Miracast Infrastructure:** Allows users to mirror their Windows device screen to the Solstice display without the Mersive Solstice app; streams over the existing network.
 - **Miracast WiFi Direct:** Allows users to mirror their Windows device screen to the Solstice display without the Mersive Solstice app; streams P2P from the Windows device to the Pod.
 - **Android mirroring:** Allows allows screen mirroring from an Android mobile device .

 Some Android apps may block audio capture, preventing the streaming of their audio to Solstice.
 - **iOS mirroring (AirPlay):** Allows users to mirror their iOS and macOS device screens with or without the Mersive Solstice app.
 - **AirPlay discovery proxy:** Enable this option if your network does not allow use of Apple's Bonjour.
 - **Bluetooth discovery for AirPlay:** Provides another alternative for discovery for environments that do not allow UDP broadcast traffic or Apple's Bonjour protocol by allowing AirPlay users to discover the Pod using Bluetooth. Users must still connect to the same network as the Pod to stream content via AirPlay.
 - **Clientless sharing via browser:** Allows users to connect and share content via a web browser without the Mersive Solstice app.
4. Click **Save**.

Enable Solstice Conferencing in Room Intelligence Template

Enabling Solstice Conferencing in the Room Intelligence settings allows meeting hosts to share the Solstice display and use audio/video devices connected to the Solstice Pod in their video conferences. See the [Solstice Conferencing Admin Guide](#) for more information.

To learn about other settings for gathering useful information about a meeting space available in this template, see the [Room Intelligence Template](#).

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Templates > Room Intelligence**.
2. Either open the **Default** template, or click **Create New Room Intelligence Template** and enter a descriptive **Template Name**.
3. Select **Enable Solstice Conferencing** to enable Solstice-enhanced video conferences.
4. Click **Save**.

Step 8: Apply Templates and Unique-to-Pod Settings

In this step, you apply the configuration templates you created across your deployment. Repeat the process of assigning a template to a Pod for all the configuration templates you created to apply template settings to all Pods across your deployment.

You also find directions for how to apply settings that are unique to a Solstice Pod, such as room calendar authentication details, after assigning a Pod to a pre-configured template. For how to change the settings of an individual Pod without assigning it to a template, see [Configure Individual Pod Settings](#).

To make the process of applying templates across your deployment more efficient, you can use categories to apply configuration templates to Pods by location, campus, or any other categories you choose to define. See [Create Categories](#) to learn more about how to create and use categories, as well as best practices.

How to Apply Configuration Templates to Solstice Pods



Solstice administrators should be aware that the Cloud settings for a Solstice Pod take precedence and overwrite any conflicting settings on the Pod itself.

In the case of a settings mismatch for a Pod between Solstice Cloud and the Pod's own settings, Cloud settings always "win." The only exception is when a settings change in a Cloud template causes Solstice Cloud to be unable to connect to the Pod. In this case, the settings in that template set are rolled back to the last working configuration for that Pod. Pod and template status indicators alert users when this case occurs.

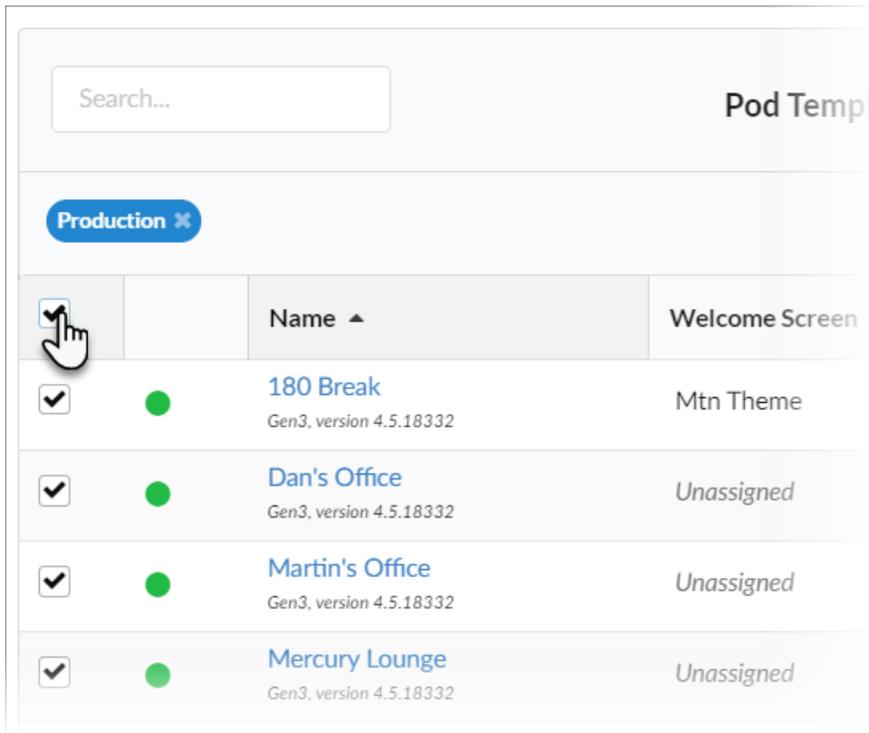
1. In the left sidebar menu of Solstice Cloud, click **Manage > Pods**.

The Pod Template Assignments table displays. This table is used to apply templates across your deployment. You can apply a template to multiple Pods at once.

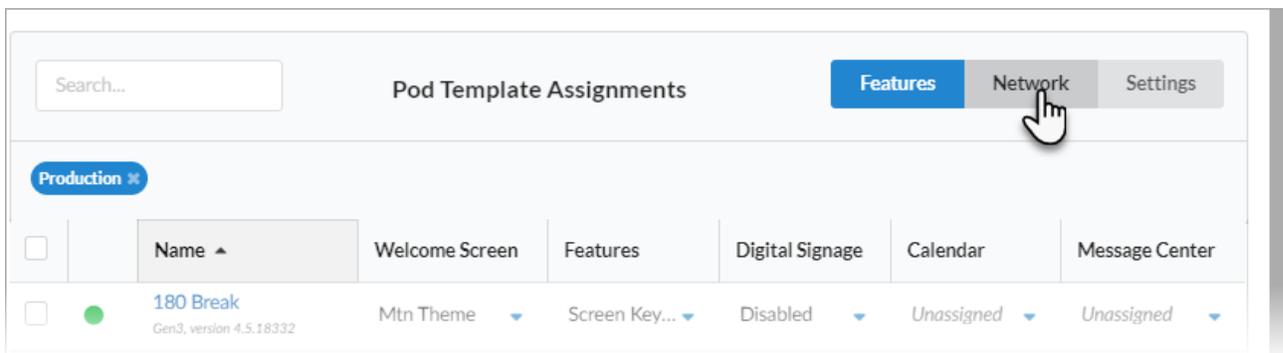


Filter Solstice Pods in your deployment by default categories or categories you have created to apply templates efficiently to similar Pods. Filters allow you to apply templates by criteria such as location or campus, depending on the categories you have created and assigned to Pods.

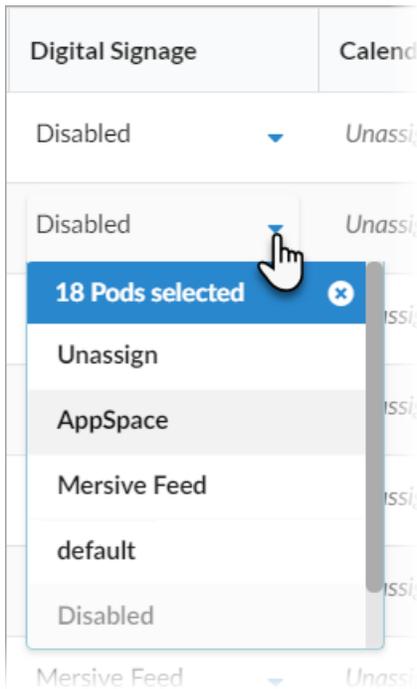
- Select the Pods you want to apply the template to. You can select each Pod's checkbox individually, or select the checkbox in the header row of the table to select all Pods showing in the table.



- For each template you want to apply, go to the corresponding template type column (e.g., Welcome Screen). You can view different groups of templates by selecting a template category in the upper right corner of the table.

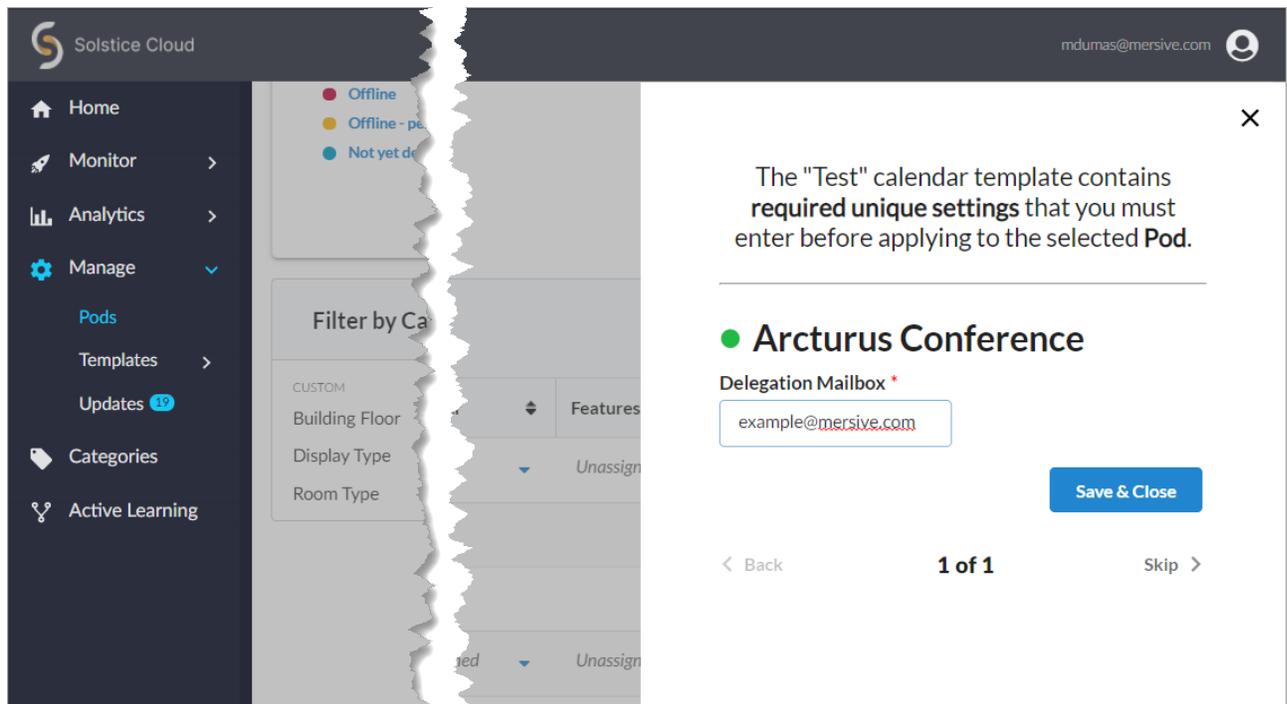


4. Select the template with the desired configuration from the list in the appropriate column for one of the selected Pods. This applies the template to all the selected Pods in the table.



5. Click **Confirm** when to confirm applying the selected template to all selected Pods.
6. As changes are being applied, the pending changes 🕒 icon appears next to the template(s) being applied. After the changes are applied, the Pod's normal status resumes.
 - If a Pod is offline, any changes made are applied when the Pod comes back online.
 - If a settings change in a Cloud template causes Solstice Cloud to be unable to connect to the Pod, the Pod's settings for that template is rolled back to their previous configuration. A failure icon ❗ shows that the template could not be applied.

7. If a template you applied has any unique-to-Pod settings that need to be applied each Pod individually, a pop-up pane appears prompting you to enter the needed information for each affected Pod. After you complete all of the settings screens, click **Save & Close**.

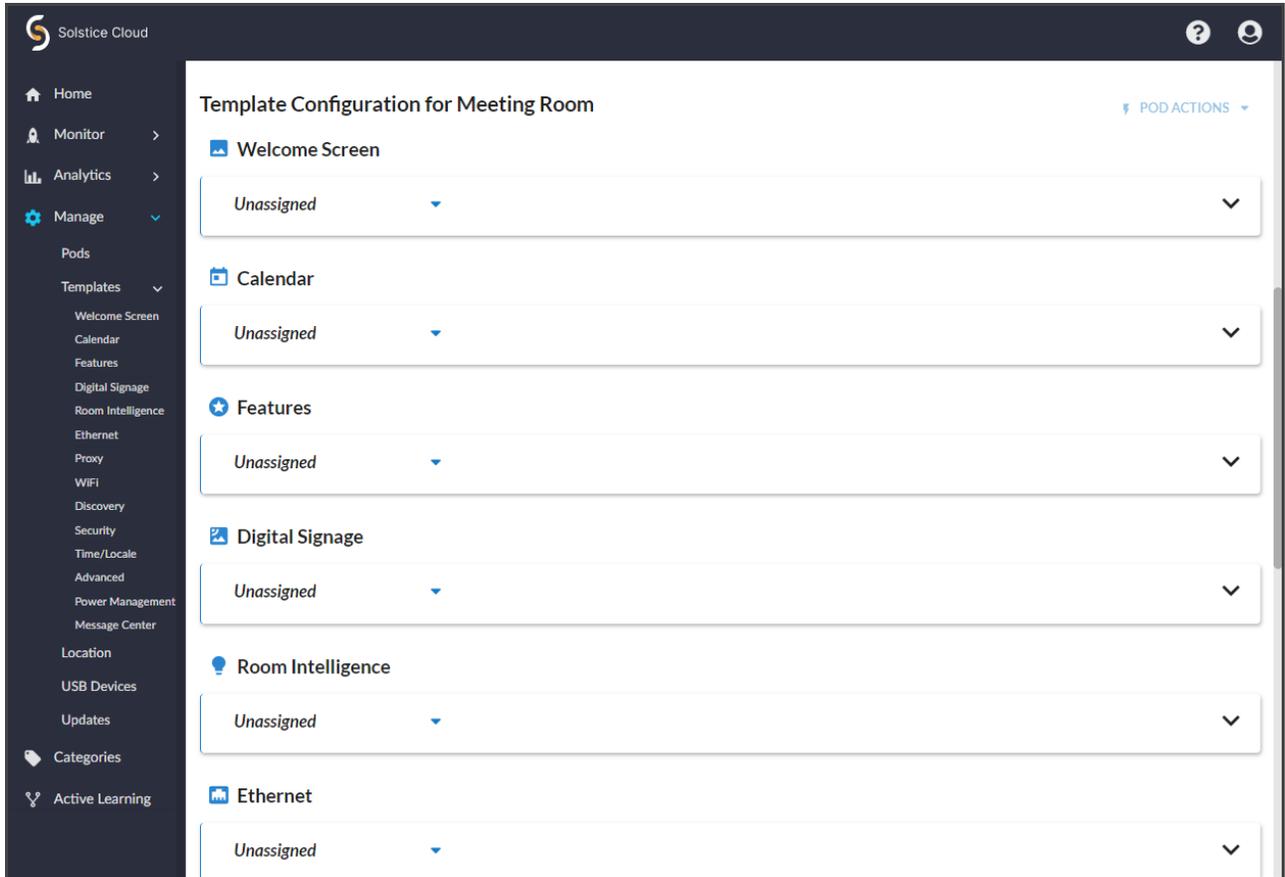


 Solstice checks the settings selected for a Pod in Solstice Cloud management against the settings on the Pod itself approximately once an hour, as well as upon Pod reboot.

How to Configure Unique-to-Pod Settings for an Individual Pod

If you are not able to enter a unique-to-Pod setting when assigning templates to multiple Pods, use the directions below to apply settings such as room calendar authentication details after assigning a Pod to a template. For how to change a group of settings for an individual Pod without assigning it to a template, see [Configure Individual Pod Settings](#).

1. In the left sidebar navigation panel of Solstice Cloud, click **Manage > Pods**.
2. In the Pod Template Assignments table, click the name of the Pod you want to configure individually.
3. Scroll down to the Template Configuration section. Click the  icon to expand the options available for a particular settings category, such as Calendar.



4. If the selected Pod was previously assigned to a template, click **Edit** to interact with the configuration options.
5. After entering each setting that is unique to the individual Pod, such as Username or Password in the Calendar settings, click **SAVE** near the edited settings.

 Do not click Save as Unassigned or Save as New Template at the top of the settings section because this removes the previously assigned template for that Pod.

6. A pop-up message confirms the individual Pod setting is updated.

Step 9: Validate Your Deployment

After [configuring your Solstice deployment using Solstice Cloud \[13\]](#), you can validate the functionality of your deployment with the following steps.

- Step 1: Connect devices to network.** Connect a user device such as a Windows or macOS laptop or an iOS mobile device to a network also connected to the Solstice display.
- Step 2: Download the Solstice app.** Open a web browser and enter the IP address shown on the welcome screen of the Solstice display. Follow the link to get the Solstice app.
- Step 3: Verify available devices are showing.** Launch the Solstice app. A list of discovered Solstice displays available for connection should appear. If no displays appear, you may still need to configure SDS.
- Step 4: Connect to the Solstice Pod display.** Click or tap the name of the desired Solstice display to connect the user's device to that display.
- Step 5: Test sharing options.** While connected to the Solstice display, test the following sharing options with your Solstice app. If playing a video, you should see about 22-30 fps from a 1080p resolution device, depending on its specs. Audio should be synchronized.
 - Share desktop, or mirror mobile device screen (AirPlay or Android screen mirroring)
 - Share application window (such as PowerPoint or a PDF)
 - Share media files (video files and images)

Other Considerations

Below are some best practices that should be taken into account or performed after deploying Solstice.

- If you want to learn more about how to enable and use Solstice to connect to video conferences, see our [Solstice Conferencing Admin Guide](#) and [Solstice Conferencing User Guide](#).
- If you want to learn more about how to enable and use Solstice Active Learning, see our [Solstice Active Learning Guide](#).
- Depending on your network security policy, you may need to export a list of the Solstice displays' MAC addresses and provide it to your network team so they can whitelist them on the network. You can export the list from the Solstice Dashboard.
- If you centrally manage Windows-based client applications, Mersive provides MSI and SCCM installers for the Solstice app. Learn more about [MSI](#) and [SCCM](#) installations.