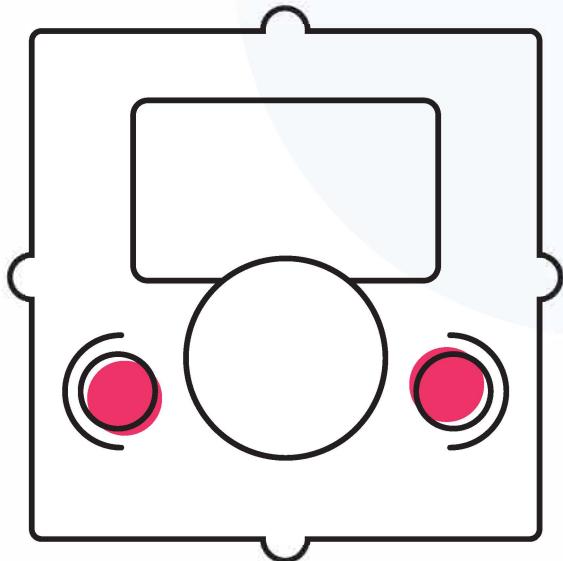
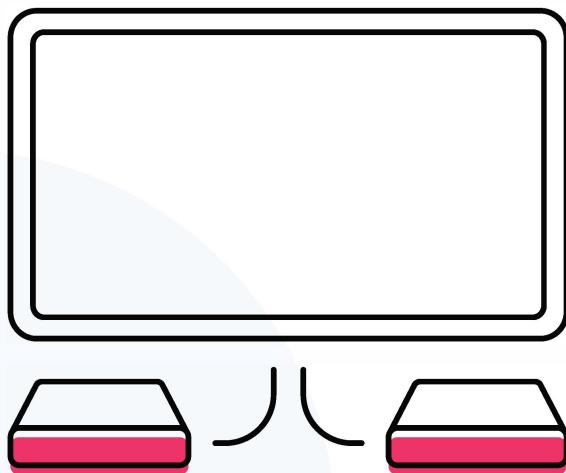




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Solstice Active Learning Guide

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Get Started with Solstice Active Learning

Solstice Active Learning is a software-enabled active routing solution for multi-team learning environments that allows educators to control, share, and engage with students. The application provides a simple active learning space design tool, drag-and-drop video sharing between screens, and an instant messaging system that can broadcast information to each display on demand.

Solstice Active Learning can be enabled on Solstice Gen3 Pods with software version 4.5 or later with a current Active Learning subscription. Additionally, each designer and facilitator must have a Solstice Cloud account in order to virtually design rooms and route video in real-time using the free Active Learning app.



Each Active Learning video routing connection is counted towards the licensed number of users for the Pod. For example, Solstice Pods with Small Group Edition licensing will allow up to four total connections to it, including those from active video routing. For Solstice Pods with Unlimited user licensing, the maximum number of Active Learning video routing connections is 8; however, an unlimited amount of Solstice users will be able to connect and share to that individual Pod.

Steps to Get Started with Solstice Active Learning

- Physical setup of the Active Learning room. For more information, see the Solstice Active Learning Setup topic below.
- Log in to your Solstice Cloud account and invite Active Learning Designers and Facilitators to create their accounts. If your organization does not already have a Solstice Cloud account, see our Solstice Cloud Admin Guide for more information on how to set up your account.
- Designers and Facilitators accept the email invitation to create their accounts
- Designers and Facilitators download the Solstice Active Learning app
- Designer virtually designs and sets up the active learning room within the Solstice Active Learning app
- Facilitators use Solstice Active Learning app to conduct active learning sessions, route video and content, or broadcast messages within the active learning room

How To

Invite Active Learning Designers and Facilitators to Create Their Accounts

Solstice administrators must invite Active Learning users and assign an Active Learning user role in

the Solstice Cloud portal.

1. Log in to the Solstice Cloud portal as an administrator.
 2. Click the  icon in the top-right corner of the portal, then click **Account**.
 3. In the **Invite someone to Solstice Cloud** field, enter in the email address of the user you wish to invite.
 4. From the **Choose a Role** drop-down, select one of the following options:
 - **Active Learning Designer** - Can use the Solstice Active Learning app to virtually design and set up the active learning rooms. Designers are also able to conduct active learning sessions and route video and content in the active learning room.
 - **Active Learning Facilitator** - Can use the Active Learning app to conduct active learning sessions and route video and content in the active learning room.
 5. Click **Send Invite**.
-

Enable Screen Key Verification

For enhanced in-room security, a Solstice administrator can require a screen key to be entered by the facilitator before connecting to the room.

1. Log in to the Solstice Cloud portal as an administrator.
 2. In the left sidebar menu, go to the **Active Learning** tab.
 3. Next to the Screen Key Verification option (located above the Filter by Category section), hover your mouse over OFF, and in the pop-up, click **Turn On**.
-

Download the Solstice Active Learning app

The Solstice Active Learning app can be installed on a laptop or tablet device. Windows and macOS laptops with a minimum resolution of 1024 x 768 and Android or iOS tablets with 10" screens or larger are supported. Active Learning Designers and Facilitators must download the app to use the Solstice Active Learning capabilities.

- Users with laptop computers can visit mersive.com/download to download the Solstice Active Learning app.
 - Users with tablet devices can download the Solstice Active Learning app from their respective app store.
-

Deploy the Active Learning app with MSI

The MSI installer package of the Solstice Active Learning app allows for a GUI-based installation on a

local machine or GPO deployment in Active Directory. This allows your IT administrator to centrally deploy the Active Learning app on Windows machines and can be set to install silently. The installer does need privileges to install system-wide, but the installer does not explicitly check for these privileges. This makes it easier to use the MSI in a remote deployment where either an administrator or the SYSTEM account can install this properly.

The MSI allows you to set the following installation parameter:

- **INSTALLDIR=** controls where the client will be installed. The default is: "C:\Program Files (x86)\Mersive Technologies, Inc\Active Learning". Note: The string "INSTALLDIR" must be written in capital letters.

The client-specific data that was stored in each user's home directory will now be stored in a central shared location. This allows for centralized management of these settings and the ability to update them for all users at installation time.

Example:

```
msiexec /i ActiveLearning.msi INSTALLDIR="C:\Program Files  
(x86)\Mersive Technologies, Inc\Active Learning" /quiet /log  
c:\ActiveLearningClient.log
```

The above example will:

- Silently install the client in the directory C:\Program Files (x86)\ActiveLearning
- Write an installation log file named C:\ActiveLearningClient.log

If stepping through the InstallShield wizard, the installation directory can also be set on the installer's Destination Folder dialog page.

FAQ

How do I grant Active Learning access to a guest or substitute teacher?

Each Solstice Active Learning user should have a unique login. Mersive does not recommend creating a universal guest account for guest facilitators.

Solstice Active Learning Setup

The Solstice Active Learning solution leverages existing TCP/IP-based networking, a flexible software control platform, and the Solstice Pod platform connected to each team table.

System Components

Physical setup and configuration of a Solstice Active Learning room is straightforward. The system only requires a few components:

- **Solstice Pods.** The Solstice Pod is a network attached wireless sharing device that supports collaboration at each of the team tables as well as the primary display. It supports HDMI output at up to 4K to the display monitor and attaches to the network via standard Ethernet.
- **Student devices.** These devices are brought to the room by the students participating in the active learning space.
- **Facilitator device.** This device is used by the facilitator or faculty member to control multi-screen routing, send messages to the team table displays, and generally interact with the displays.
- **Solstice Active Learning app.** The Solstice Active Learning app is what designers and facilitators use to virtually design and sets up active learning rooms, and conduct active learning sessions and route video and content in the active learning room within active learning spaces.
- **Solstice app.** The Solstice app is what students can use to share content to the team table displays. The Solstice app can be installed on Windows, macOS, Android and iOS devices. However, there are also multiple app-free sharing options supported such as AirPlay, Miracast, or wired HDMI input. Browser-based sharing is also available and supported for Chromebook, Windows, macOS, and Linux devices.

System Requirements

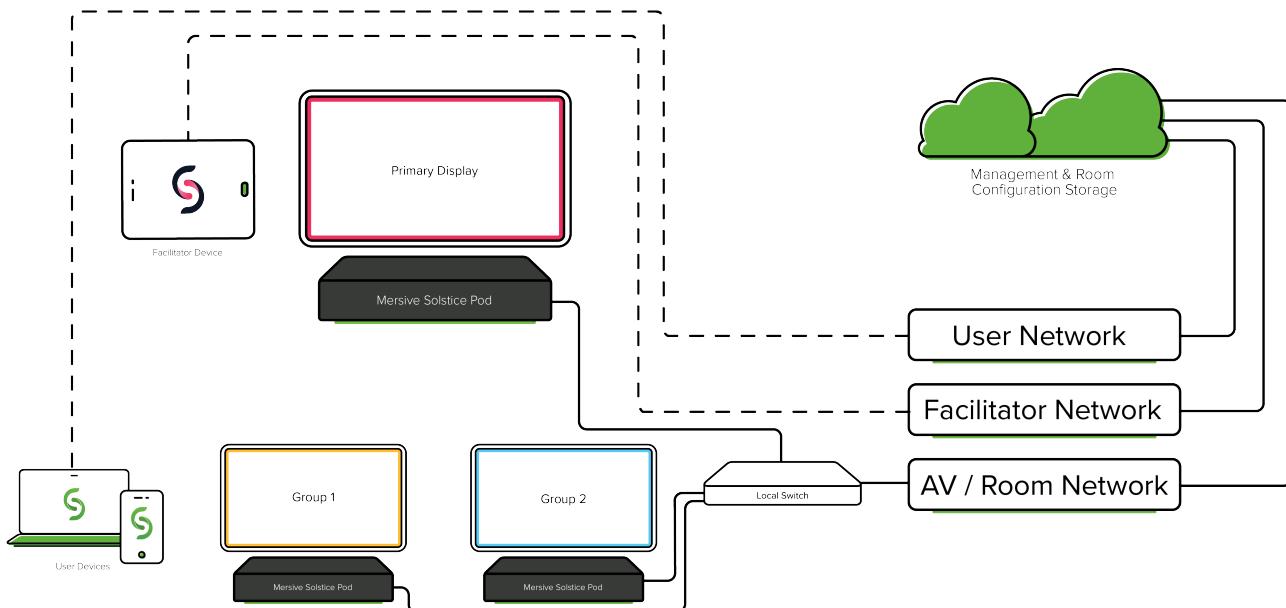
- Each group display monitor must be directly connected to a Solstice Pod through an HDMI video cable plugged into an HDMI port on the back of the Pod.
- Each of the Solstice Pods must be directly connected to the same Gigabit switch with a Pod-to-Pod latency of less than 3-4ms. While there are network topologies that can effectively maintain this performance by segmenting Pod traffic to a dedicated VLAN, for simplicity, we recommend simply wiring Ethernet to a local switch.
- Student devices and the facilitator device must all be able to route TCP traffic to each of the Pods in the room. For example, a facilitator device may be deployed on an internal faculty network and student devices may be connected to a student network. However, both of these networks must support peer-to-peer routing between the facilitator or student device and the Solstice Pods. This allows students at each of the team tables to collaboratively share content

from their devices to the group display. You may also need to [open certain network ports](#) for Solstice and Solstice Active Learning to work correctly.

- The facilitator device must have access to the internet so that management, configuration changes, and the state of the application can be stored.
- The Solstice Active Learning app is supported on the following devices with a 1024x768 resolution or a 10" screen or greater:
 - Windows 10 laptops
 - Mac laptops with Catalina OS
 - iOS tablets with latest OS
 - Android tablets with latest OS

Example Network Configuration

Shown below is an example network configuration for an Active Learning Space with several group displays and a primary display. Each Pod is routed to a local switch that is attached to the campus network. Different network segments can be configured to carry different device traffic as long as they are routable between one another. Finally, the facilitator device must be able to reach the cloud for management and configuration.



System Performance

When configured as described, Solstice Active Learning enables users to route content and videos from one display to another within the room. Bandwidth utilization and frame rate are dependent on both the number of simultaneous video sends as well as the compressibility of the content on the source display. To learn more about Mersive's bandwidth and frame rate testing for active learning scenarios, [view the full whitepaper here](#).

FAQ

Can students and facilitators be on different networks?

Yes, the facilitator (via the Solstice Active Learning app) and students (via the Solstice app) can be on different VLANs as long as the appropriate [network ports](#) are opened. The apps utilize the same network ports and rely on routable TCP traffic.

Do I need a special Ethernet switch?

No, virtually any Ethernet switch will work with Solstice Active Learning.

What is the maximum number of displays I can have within a Solstice Active Learning environment?

Our recommended number of displays varies depending on use case and type of content being shared. Download our Active Learning performance white paper to see the expected frame rate based on the number of displays.

Designing an Active Learning Room

Once the Pods have been connected to their team table displays and deployed on the network, Active Learning Designers can virtually design and enable a new active learning space using the Solstice Active Learning app's intuitive drag-and-drop interface.



To create and design rooms within the Solstice Active Learning app, users must first be invited to create an account by a Solstice Cloud administrator and assigned the Active Learning Designer user role.

How To

Download the Solstice Active Learning app

The Solstice Active Learning app can be installed on a laptop or tablet device. Windows and macOS laptops with a minimum resolution of 1024 x 768 and Android or iOS tablets with 10" screens or larger are supported. Active Learning Designers and Facilitators must download the app to use the Solstice Active Learning capabilities.

- Users with laptop computers can visit mersive.com/download to download the Solstice Active Learning app.
- Users with tablet devices can download the Solstice Active Learning app from their respective app store.

Create a New Active Learning Room

1. Open and sign in to the Solstice Active Learning app using your Solstice Cloud login credentials.
2. Click the Add icon in the top-right corner of the app.
3. In the **Enter Name** field, enter in the name of the Active Learning room. Tip: Enter in a room name that Facilitators will be able to easily identify as the correct room.
4. Select the room shape that best represents your room from the list that is provided.
5. Click **Save**. The Design panel opens.
6. Drag-and-drop the different elements provided, then rotate or adjust the size if needed, to make a virtual representation of the active learning room:
 - Place a door in the correct location so that Facilitators will be able to quickly orient themselves in relation to the room.

- Drag a **Primary Display** to the location where the Facilitator's main display is located. In the **Pod Address** field, enter in the Pod's IP address, then click **Save**.
 - Drag a **Flat Panel or Projector** into the room to build a new team block. Enter in the **Team Name**, **Pod Address**, and select a color for the team. You can drag tables and chairs into the team block as well. When you are done building your team block, click **Save**.
 - Chairs and tables can also be placed in the room outside of team blocks to aid in creating an accurate representation of the room.
7. Choose one Pod to route audio to when routing content with audio within the room (optional).
- a. Click the three vertical dots to **Edit** the team block or primary display where audio should play.
 - b. Click the **Activate audio output** toggle on (green), then click **Save**.
8. When you are done building the Active Learning room, click the **Save** button at the bottom of the screen.
-

Duplicate an Active Learning Room

For quick room creation, you can duplicate an existing Active Learning room. Go to the home screen of the Active Learning app, click on the vertical ellipsis icon next to the room name, then select **Duplicate**. A copy of the Active Learning room will be added to the bottom of your room list.

Edit an Active Learning Room

To edit an Active Learning room, go to the home screen of the Active Learning app, click on the vertical ellipsis icon next to the room name, then select **Edit**. The design panel opens allowing you to edit the room configuration. When you are done making changes, click the **Save** button at the bottom of the screen.

Delete an Active Learning Room

To delete an Active Learning room, go to the home screen of the Active Learning app, click on the vertical ellipsis icon next to the room name, then select **Delete**. When prompted if you are sure you want to delete the room, click **Confirm** to permanently delete the room.

Facilitating an Active Learning Session

The Solstice Active Learning app's drag-and-drop interface allows facilitators to easily conduct active learning sessions and route video and content within the active learning space. The app is designed for educators with built-in engagement tools, such as the ability to broadcast messages across all displays.



To facilitate active learning rooms within the Solstice Active Learning app, users must first be invited to create an account by a Solstice Cloud administrator and assigned the Active Learning Facilitator user role.

How To

Access an Active Learning Room

1. Open and sign in to the Solstice Active Learning app using your Solstice Cloud login credentials.
2. Click on an Active Learning room to access the facilitator control panel for that room.
3. If prompted, enter the four-digit screen key shown on a room display to connect.

Route Video in the Active Learning Session

Solstice Active Learning provides multiple ways to route video feeds to and from the displays in the active learning room:

- **One to one** - Press and hold on the primary display or a team block and drag to any other display in the room to route video from the first display to the second display. For example, pressing and holding on the Orange Team block then dragging to the Green Team block will route the video feed of the Orange Team's display to appear on the Green Team's display. Multiple one to one video routing feeds can be created simultaneously.
- **Primary to all displays** - Press and hold on the primary display to route its video feed to all other team displays, or click the **Primary to All** button at the bottom of the screen.
- **Team display to all displays** - Press and hold on the team display to route its video feed to the primary display and all other team displays.
- **Multiple displays to primary** - Click and drag multiple team displays to the primary display to route their individual video feeds to the primary display simultaneously. You can also press and hold on a team display and Solstice will automatically route its video feed to the primary display, and can be repeated for multiple team displays.

- To stop all active video routing, click the **Reset** button at the bottom of the screen, or stop select feeds by clicking the circle in the middle of the connected line.



Multiple displays cannot have their video feeds routed to the same secondary display at the same time. Facilitators are also unable to daisy chain video routing between the displays. For example, if the Green Team display is being routed to the Blue Team display, facilitators cannot route the Blue Team's feed to any other display. This is so that it always remains clear to viewers whose original video feed they are viewing.

Broadcast Messages to All Displays

Solstice Active Learning gives you an easy way to create and broadcast messages to all of the displays in the active learning room.

1. Click the **Add New** button at the bottom of the screen.
2. Enter in the message you wish to broadcast.
3. Select an icon that best represents the message.
4. Click **Confirm**. Once created, the message and the corresponding icon appear at the bottom of the screen for easy access.
5. To broadcast the message, click the message's icon at the bottom of the screen. The icon will turn blue to indicate it is being broadcast to the displays.
6. To stop the message broadcast, click the message icon again.