

User Guide (English) - three10 X® Version 2023.2

Table of Contents

| Table of Contents | 2 |
|-----------------------------|----|
| User Guide | 5 |
| Digital Experience Software | 5 |
| Key features | 5 |
| User Guide | 6 |
| Digital Experience Software | 6 |
| Key features | 6 |
| Hardware Recommendation | 7 |
| Visualisation PC | 7 |
| Control Device | 7 |
| Glossary | 8 |
| Media | 8 |
| Layer | 8 |
| Slide | 8 |
| Chapter | 8 |
| Canvas | 8 |
| Section | 8 |
| Experience | 9 |
| Components | 10 |
| X-Creator | 10 |
| X-Manager | 10 |
| X-Stream | 10 |
| Installation | 11 |
| First Steps | 13 |
| Welcome Screen | 13 |
| Settings | 13 |
| Tip | 14 |
| Login Area | 14 |
| Experiences | 15 |
| User Interface | 17 |
| Control UI | 18 |
| Main Menu | 18 |
| Media Menu | 18 |
| Slide Menu | 19 |
| Web Window | 21 |
| Action Menu | 21 |
| Layerlist | 21 |
| Settings | 22 |
| Sync | 23 |
| Home Button | 23 |
| Layout Menu | 23 |
| Section Focus | 24 |
| Sort on Click | 24 |
| Snapping | 24 |
| Grid | 24 |
| Guides | 24 |
| Alignment/Distribution | 24 |

| Slidebar | 25 |
|--------------------------------------|----|
| Visualisation UI | 26 |
| Circular Menu | 26 |
| Media Control Bar | 26 |
| Media Control Bar | 28 |
| Audio | 29 |
| lmage | 29 |
| Shape | 29 |
| PDF | 30 |
| NDI® Stream | 30 |
| PTZ-Camera Control | 30 |
| Text | 31 |
| Video | 32 |
| Video Source | 32 |
| Audio/USB Routing | 33 |
| Web | 33 |
| 3D Asset | 33 |
| Media Layer | 35 |
| Select | 35 |
| Move | 35 |
| Scale | 35 |
| Crop | 35 |
| Placeholder | 35 |
| Canvas | 36 |
| Setup | 36 |
| Resizable Canvas | 36 |
| Modules | 38 |
| 3D Stereo | 38 |
| Crestron | 38 |
| Crestron Presets | 38 |
| Crestron Connection Status | 38 |
| Crestron Reconnect | 38 |
| Crestron Direct Controls | 38 |
| Room Control | 39 |
| Presets | 39 |
| REST Direct Controls | 39 |
| Streaming | 39 |
| Shortcuts | 41 |
| Experience | 41 |
| Tools | 42 |
| REST API - X-Web Control | 42 |
| X-Service Tool | 42 |
| X-Stream | 42 |
| X-WebRTC | 43 |
| Installation | 44 |
| First steps | 46 |
| Navigation | 46 |
| Navigation with administrator rights | 47 |

| Navigation without administrator rights | 47 |
|---|----|
| Experiences | 49 |
| Create and configure | 49 |
| Upload Media | 50 |
| Add Web Page | 51 |
| Add Text Layer | 52 |
| Licenses | 53 |
| Public Media | 54 |
| Users | 55 |
| | |

User Guide

Digital Experience Software

three10 X is an innovative AV-IT software that makes it easy to create and control stunning digital customer experiences - that's how you excite today!

That means our **three10 X** technology catalyzes the AV-IT transformation of digital, immersive experiences by taking the complexity out of large-scale AV setups.

All in all: three10 X is an intelligent and user-friendly content/source mixer made in Germany.

With three10 X, exceptionally high resolutions can be handled using a wide range of display technologies with a minimum of hardware.

The software allows the management and distribution of any high-resolution content such as images, movies, PDFs, web pages, video sources, real-time renderings or streams. All supported media content can be controlled, modified and combined into complex arrangements.

The multidirectional client-server communication allows **three10** X to adapt to many structural requirements, resulting in high flexibility and dynamics for a variety of application purposes.

Numerous input options are available for control, either via classic mouse control, touch input via tablet and screens, or support for presentation controllers.

Key features

User Experience

Control functions easily and intuitively via touch or mouse

Multi User Presentation

Secure collaboration and presentation within the network

Smart Screen Management

Control different display technologies in native resolution

IP Streaming

Low latency image transmission over LAN and WLAN

3rd Party Integration

Easy connection of external tools and applications

Optimized Performance

Stable and robust by intelligent software architecture

User Guide

Digital Experience Software

three10 X is an innovative AV-IT software that makes it easy to create and control stunning digital customer experiences - that's how you excite today!

That means our **three10 X** technology catalyzes the AV-IT transformation of digital, immersive experiences by taking the complexity out of large-scale AV setups.

All in all: three10 X is an intelligent and user-friendly content/source mixer made in Germany.

With three10 X, exceptionally high resolutions can be handled using a wide range of display technologies with a minimum of hardware.

The software allows the management and distribution of any high-resolution content such as images, movies, PDFs, web pages, video sources, real-time renderings or streams. All supported media content can be controlled, modified and combined into complex arrangements.

The multidirectional client-server communication allows **three10** X to adapt to many structural requirements, resulting in high flexibility and dynamics for a variety of application purposes.

Numerous input options are available for control, either via classic mouse control, touch input via tablet and screens, or support for presentation controllers.

Key features

User Experience

Control functions easily and intuitively via touch or mouse

Multi User Presentation

Secure collaboration and presentation within the network

Smart Screen Management

Control different display technologies in native resolution

IP Streaming

Low latency image transmission over LAN and WLAN

3rd Party Integration

Easy connection of external tools and applications

Optimized Performance

Stable and robust by intelligent software architecture

Hardware Recommendation

Visualisation PC

Prozessor: Min. intel i7 12. Gen, min. 4 Cores, min. 3,5 GHz, or equivalent Xeon W-33xx

GPU: Depending on the playout resolution

RAM: Min. 16 GB RAM

Memory: Min. 500 GB SSD M.2

Operating System: Windows 10 Pro

Control Device

Prozessor: From Intel 12th Gen. min. 2.5 GHz

GPU: Depending on the playout resolution

RAM: Min. 8 GB RAM

Memory: Min. 250 GB SSD

Operating System: Windows 10 Pro

Glossary

Media

Media are all different types of Media Assets:

- Audio
- 🗠 Image
- 🖟 PDF
- NDI® Stream
- T_T Text
- 🔲 Video
- 🖣 Video Source
- 😭 3D Asset

Layer

A Layer can contain exactly one Media Asset. Depending on the media type, different functions are provided.

- · Geometric arrangement
- Status visible / not visible
- · Automated sequence on / off
- Position in asset (e.g. in video)

Slide

A Slide is a combination of different Layers and automations. This combination can be saved as a so-called "Slide". Only one Slide can be displayed at a time. Control bars, the so-called Slide Bar and Media Control Bar, allow the selection of Slides as well as the adjustment of the behavior of individual Layers in it.

Chapter

A Chapter is a collection of Slides. Chapters allow a better overview and structuring of the Experience. In addition, a Chapter can be used to perform certain operations on all the Slides it contains, such as deleting or moving them.

Canvas

The Canvas describes the actual display surface on which the various Layers can be displayed. The Canvas is defined by the sum of displays, their arrangement and the selected playout method (e.g. stereo 3D). For special requirements, the setup can be dynamically adapted to the necessary parameters.

Section

In some configurations, the Canvas is divided into Sections, which are represented graphically on the Canvas by a frame and the name of the Section in the upper left corner. The Sections are used to divide the Canvas into

regions, e.g. to make it easier to adjust the layout of the Slides or to separate areas that are displayed on different screens.

Experience

An Experience includes the stored Slides with Layers, as well as the stored automations. Each Experience is provided with specific media and additional users can be assigned, since initially only the user who created it has access.

• NDI® is a registered trademark of NewTek Inc.

Components

X-Creator

The X-Creator handles the visualization of an Experience with the associated media, which are displayed in Slides via Layers. The user interface (UI) of the X-Creator can be set in different ways. The Control UI variant allows users to quickly and easily modify slides, add new content and walk through the presentation at the same time. The Visualisation UI is designed for large presentation surfaces as well as large touchscreens.

Furthermore, an X-Creator must be available, which takes over the live state of the Experience and the administration of the other X-Creators. This task can be performed exclusively by the X-Creator if it is set up as Server, but also in addition to the display, as Host. All other X-Creators are configured as Clients.

X-Manager

The X-Manager administers experiences, media, slides and user management. The media can be uploaded via the associated web frontend and provides the content to the X-Creators. The administrator can create new users and assign Experiences to users. Users can manage the Experiences for which they have received usage rights. Own media can be added to these Experiences.

X-Stream

With X-Stream, PC desktops can be made available virtually to an Experience as an NDI® stream. The stream can be managed and modified like any other asset in the presentation. In addition, the mouse and keyboard interaction can be taken over via the X-Creator.

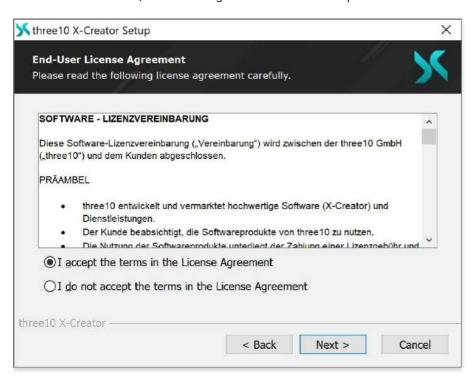
• NDI® is a registered trademark of NewTek Inc.

Installation

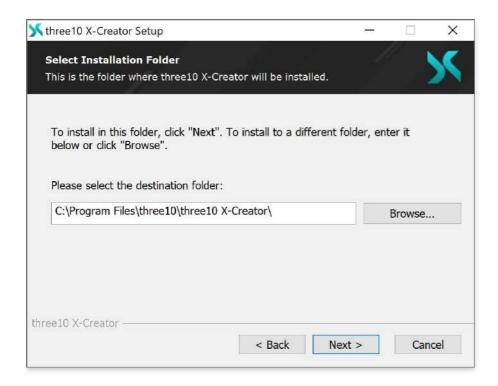
The installation is done via a standard installation routine.



To install the software, the license agreement must be accepted.



Changing the installation path of the X-Creator.

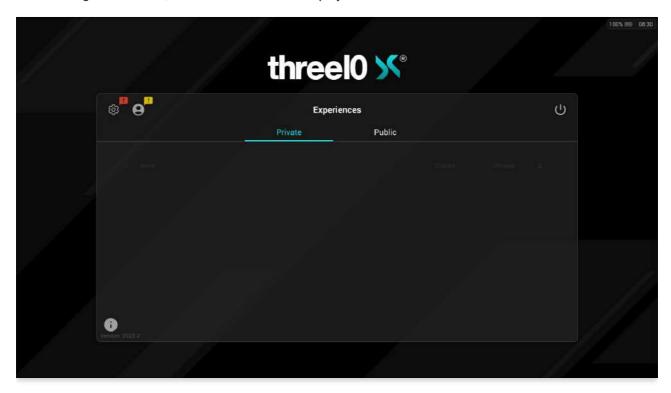


When starting the X-Creator for the first time, the X-Creator must be accepted in the Windows Firewall, here the communication should be allowed in the popup.

First Steps

Welcome Screen

After starting the X-Creator, the Welcome Screen is displayed.



The version of the X-Creator is displayed at the bottom left. If the version of the X-Creator differs from other X-Creators in the Environment, a Version Error dialog appears each time the X-Creator is started. This shows the different version of the server or host and that of the client currently open and points out that the functionality is not guaranteed in this way. This dialog can be clicked away and the application can be used normally, but it is strongly recommended to inform the administrator so that he can adjust the versions.

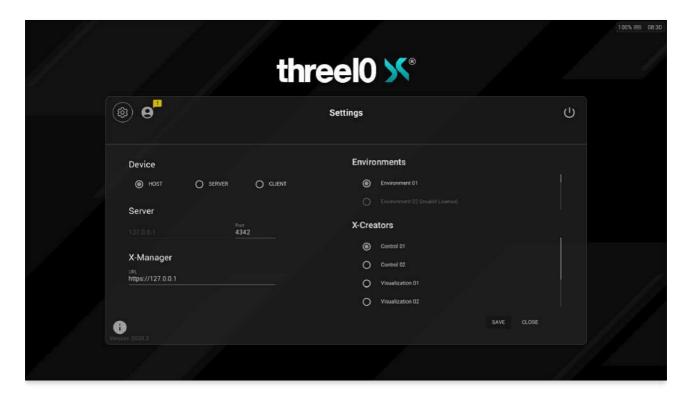
In the lower right corner, the free disk space is displayed. If it is less than 5 GB, this information is colored red. If it is an X-Creator with Control UI, a message with the remaining free memory is also displayed.

The info button at the bottom left can be used to display all third-party software licenses.

The top bar contains the settings (a) and the user login area (3).

Settings

Each X-Creator can act as a host, client or server. After the first start, one of these roles must be specified. This can be changed at any time later.



Client

Display and control of the X-Creator.

Server

Communication between Manager and Creator, as well as between X-Creators.

Host

Combination of server and client in one instance.

= Tip

Each Environment needs one host or server. Multiple servers/hosts per Environment are not possible.

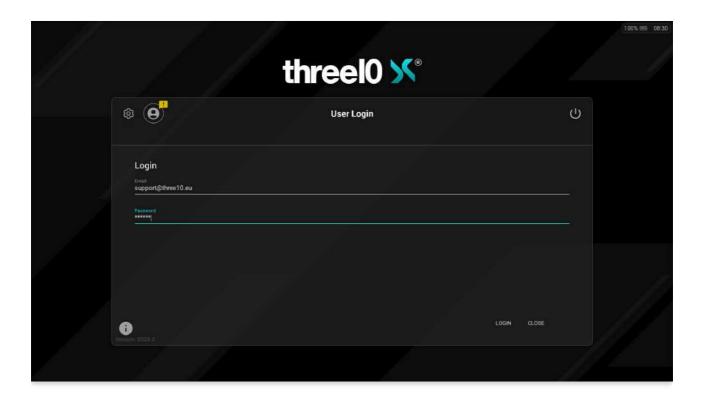
If Host or Server is selected, the URL of the X-Manager must be specified. In addition, the port over which the X-Creators communicate can be defined. If selected as client, the IP address and port of a server or host must be specified.

Next, the available environments and X-Creator configurations appear. The configuration must be assigned to the device here. The Environments and X-Creator configurations are managed via the X-Manager (administrator rights required).

After changes to the setup, a restart of the application is required, which is displayed visually.

Login Area

A login with its user under es is possible, as public users (without being logged in, can only view and use public Experiences). The user administration is done via the X-Manager (administrator rights required).

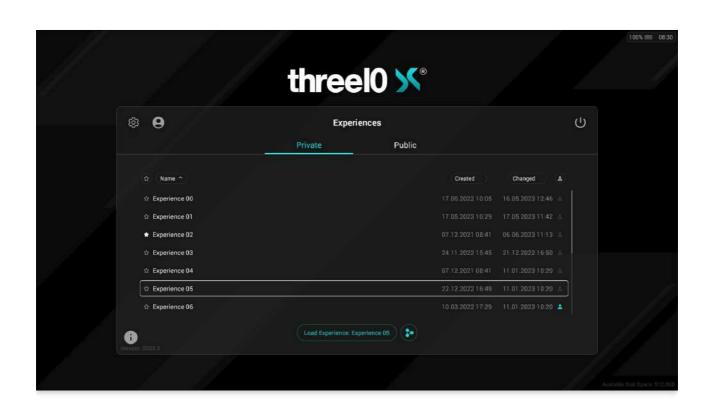


Experiences

After successful configuration, all available Experiences are displayed. The list can be sorted by name, creation date, modification date and if private or public. In addition, the $\ \ \ \$ button can be used to hide all Experiences that are not marked as favorites. This marking is done via the X-Manager and is displayed in the Experience Screen to the left of the Experiences by $\ \ \ \ \ \$.

After selecting an Experience, a button with the name of the selected Experience appears at the bottom. By pressing the Load Experience: Experience-Name button, the X-Creator opens the Experience and displays the first Slide. If the button is enabled, all other X-Creators in the Environment follow this X-Creator and also load the first Slide of the Experience. If the button is deactivated, the other X-Creators remain unchanged at their current status.

• indicates Experiences in which other X-Creators with active (Color: highlight color) and inactive (Color: white) syncs are located.



User Interface

In general, there are two different user interface (UI) types, the Control UI and the Visualisation UI. Which is displayed depends on whether the client type in the selected X-Creator configuration in the X-Manager has been set to Control or Visualisation (administrator rights required).

If it is a Control-X-Creator, the Control UI is always visible and the Canvas is embedded in the interface and is not displayed full screen. The Control UI is used to control the presentation.

If it is a Visualization-X-Creator, the Canvas is displayed in full screen and no controls are visible at first. This configuration is used when mainly content is to be displayed and no or only little interaction is to take place. If required, the interface can be faded in and almost all functions that are possible with the Control UI can be performed.

Control UI

Main Menu

The M-button in the upper left corner can be used to show or hide more detailed descriptions of the menu buttons.

This chapter describes all functions of the standard interface. If further buttons appear, they are module-specific and are described in the documentation of the respective module.



Media Menu

All buttons up to the first visual subdivision of the Sidebar represent the different types of media that can be added to the slide. They form the Media Menu. Which media types are displayed can be defined in the X-Manager (administrator rights required). The possible media types are:

- 🞜 Audio
- 🖾 Image
- 🛕 PDF
- 📑 NDI® Stream
- 🧖 Shape
- TT Text
- 🖽 Video
- ₱n Video Source
- 😭 3D Asset

This buttons open a Media Browser in which all media of the respective type uploaded to the X-Manager are

displayed. Each media is represented by a thumbnail and its name. If no media has been uploaded for the type, the icon is grayed out. In the Media Browser, the media are divided into two groups, each labeled with a heading. The Experience Media, which can be used exclusively in the currently loaded Experience and were also uploaded there in the X-Manager, and the Public Media, which were uploaded in the X-Manager via Public Media and are available for all Experiences. When media are added or deleted in the X-Manager, these changes are visible directly in the Media Browser.



The NDI® streams are divided into streams from the local network and streams that are received via an NDI® Bridge. If the name of a stream is displayed in grey instead of white, this means that the source of the stream is currently not available on all X-Creators with enabled NDI® media support.

By selecting one or more media and then activating the + -button at the bottom of the Media Browser, Layers with the selected media will be created and added to the current Slide. The new Layers are placed in the center of the Slide. Individual elements can also be dragged and dropped directly from the Media Browser to the desired position on the Slide. If there is at least one Layer of a media on the current slide, the number of Layers of this media is displayed in the upper right corner of the preview image in the Media Browser.

Using the arrow in the upper right corner of the media browser expands the browser over the entire screen, the functionality remains the same.

With the Media Browser for Text and Web, there is an additional \oplus - and $\widehat{\mathbb{m}}$ -button, which allow creating and removing media in the X-Creator. These media are also added/removed in the X-Manager.

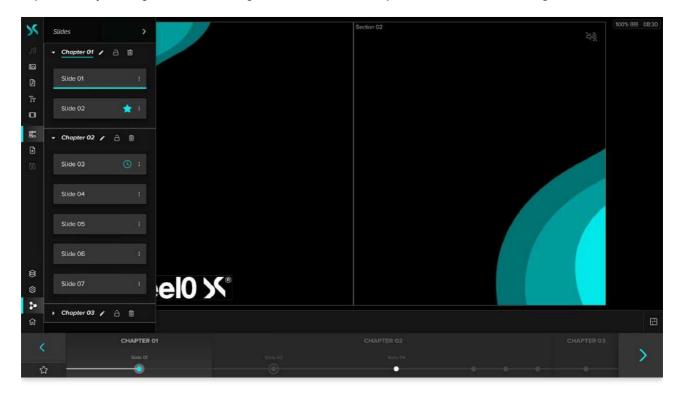
Slide Menu

The buttons \equiv , \uparrow and \odot belong to the Slide Menu.

New Slides can be created with the 📑 -button. Then a name for the Slide must be entered.

The 3-button saves the status of the current Slide. (Attention: no automatic saving)

Clicking the \(\existsit \)-button opens the Slide Browser, which displays all Slides and Chapters contained in the Experience. By holding down and moving the Slides or entire Chapters, the order can be changed.



The three icons next to the name of a Chapter can be used to rename \nearrow , lock $\stackrel{\frown}{\Box}$ and delete $\stackrel{\frown}{\Box}$ the Chapter together with all the slides it contains. If a Chapter is locked, it can no longer be moved and no slides can be added or removed.

By clicking the : -button to the right of the Slide name, you can open the Context Menu where you can perform additional actions for the Slide:



Rename the Slide

Duplicate

Create a copy of the Slide



Delete the Slide

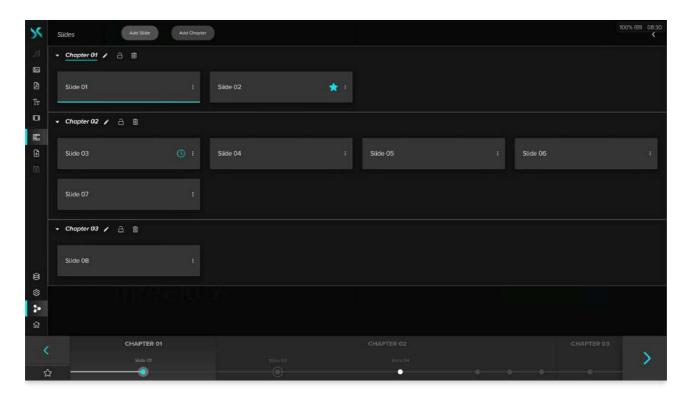


Automatically advance the Slide after the set time in seconds has elapsed. If a timer is set, it is displayed below the right Slidebar arrow and can be stopped and started by clicking.

☆ Favorite

The Slide is taken out of the Experience sequence and made permanently available. The Favorite Slide can then be loaded and deactivated again via the Favorite button below the left Slidebar arrow. There can only be one Favorite Slide.

Use the arrow next to the menu name > to expand the Slide Browser.



In the extended view, new Slides or Chapters can also be created using the Add Slide and Add Chapter buttons.

Web Window

If the Web Window has been activated and configured in the X-Manager (administrator rights required), another button appears below the buttons of the slide menu whose icon depends on the configuration in the X-Manager. This button opens a browser in the expanded menu with the website stored in the configuration. The browser can then be interacted with. There is no address bar, forward, back or refresh button.

Action Menu

The buttons 😂 , 🕸 , 🏞 and 🎧 at the bottom of the Sidebar belong to the Action Menu.

Layerlist

Use the *\ointilde{\ointi*



By pressing the ___-button, a Layer is locked and can then no longer be selected or moved on the Slide. By clicking on the preview image of the Layer, it can be shown or hidden.

By clicking the : -button to the right of the Layer name, you can open the Context Menu where you can perform additional actions for the Layer:

Delete

In the Layerlist, individual Layers can be deleted by activating the trash icon. The media remains available and can be placed on the Canvas again at any time.

Static

The layer can be set as a Static Layer for all Slides. With this function, the Layer remains in its position even when the Slide is changed and doesn't get removed.

↑ - ↓ Foreground/Regular/Background

By activating the corresponding layer-category a Layer can be moved to it. Moving by drag and drop is also possible.

₩idget

On a device with Control UI enabled, you can enable Layer as a Widget. This will display the Layer only on devices with an active Control UI.

Settings

Pressing the 👵 -button opens the Settings Menu, where the following settings can be made:

Black Screen

When enabled, all Visualization Devices show only a black screen instead of the content. Disabled by default.

Freeze

Stops playing all Layer media files on the current Slide when enabled. Disabled by default.

Unsaved Warning

Displays a warning when switching Slides if changes have been made to the current Slide and it has not yet been saved. Disabled by default.

Sync

If the Sync button is deactivated, it is possible to make changes to Slides of this and other Experiences, while all other X-Creators continue to display the state before decoupling. It is possible to switch between Experiences, navigate through Slides, add or remove Layers as desired.

Caution: If changes have been made, make sure that the Slide has been saved before activating the Sync function.

If the Sync button is activated within an experience, the current X-Creator follows the other clients in order to be up to date with the current presentation. This takes place both within an experience and across experiences (with renewed confirmation through a dialog). When the Sync button is activated on the Welcome screen, no Experiences are automatically loaded. The user now has the option to load any experience on all X-Creator.

Caution: Since all X-Creators with activated Sync are on the same level, an Experience is automatically loaded if there are already X-Creators with activated Sync in it when a client is started.

Home Button

With the far-button you can leave the Experience and return to the Experience Screen.

Layout Menu



The Layout button 🔠 located next to the Media Control Bar toggles the layout menu on the right side with

various controls.

Section Focus

If the Canvas contains at least one Section, there is a \blacksquare -button. When clicked, it focuses on the next Section and displays it as large as the whole Canvas. When you reach the last Section, the normal view is restored and the entire Canvas is shown.

Sort on Click

```
Enable/disable Layer sorting on Layer select (Enabled by default)
```

When a Layer is selected on the Slide, it automatically moves to the foreground of its layer-category.

Snapping

```
Enable/disable Layer Snapping (Enabled by default)
```

When moving, scaling, and cropping Layers, snapping lines are shown when the selected Layer is moved within a certain tolerance range. This allows you to place Layers in relation to the positions of other Layers, the Grid or custom Guides.

Grid

A grid with various dimensions can be shown to uniformly align and position Layers, which are saved automatically per Experience.

Guides

```
Show/hide custom Guides

Lock custom Guides

H Add horizontal/vertical custom Guide

Remove selected custom Guide
```

Custom guides can be added and removed as needed to add layout assistance. These are automatically saved per Experience. By locking the guides, user input interaction is disabled, but snapping remains unchanged. The position of the selected guide on the canvas can be set with drag & drop.

Alignment/Distribution

```
Enable/disable alignment mode
```

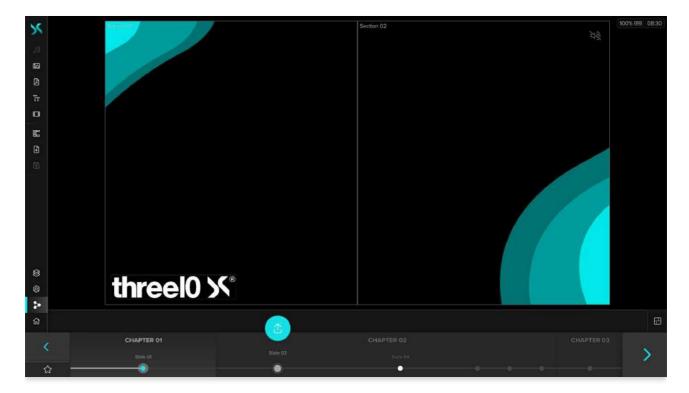
If alignment mode is enabled, multi-Layer selection is possible for aligning and distributing selected Layers (fullscreen layers are ignored).

Horizontal Align Left
Horizontal Align Center
Horizontal Align Right
Vertical Align Top
Vertical Align Center
Vertical Align Bottom

```
Vertical Distribute

Horizontal Distribute
```

Slidebar



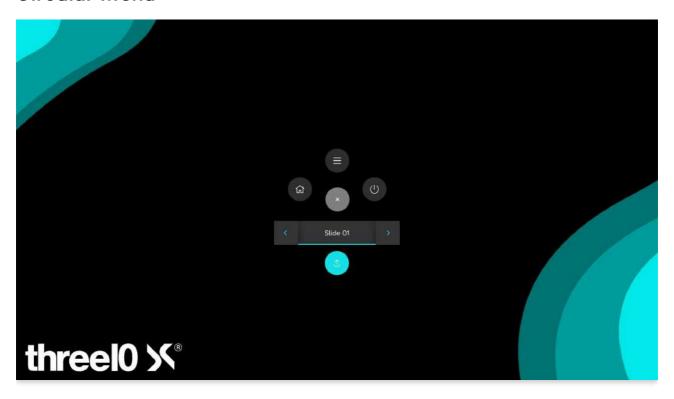
Slides can be changed on the Control Device using the colored arrow keys < > . Alternatively, the Slides can also be changed with the arrow keys on the keyboard or with a connected presentation device. The Slides can be scrolled by dragging them to the left or right or selected by clicking/touching. As soon as a Slide is selected, a colored icon appears \triangle , which can be used to activate and display this Slide. If a Favorite Slide is set, the \triangle -button appears under the left arrow key and if a timer is set for the current Slide, it appears under the right arrow key. The timer can be stopped and restarted by clicking on it.

• NDI® is a registered trademark of NewTek Inc.

Visualisation UI

In the Visualization UI, only the Canvas or the Section of the Canvas defined in the X-Manager with the Layers is initially visible in full screen. If the menu is required, the Circular Menu can first be opened by longer pressing on a free area or a locked Layer.

Circular Menu



With the × button in the middle of the menu it can be hidden again.

The (button allows you to exit the X-Creator.

With the $\widehat{\mathbf{m}}$ button you can leave the Experience and return to the Experience Screen.

The \equiv button opens a sidebar that appears identical to the Control UI and fulfills the same functions. In addition, it contains a colored \times button at the bottom that can be used to hide it again.

The name of the current Slide is displayed at the bottom. The arrow keys can be used to navigate through the Slides, but they are not loaded directly. For this purpose, the colored \triangle button must be pressed. The bottom edge of the name bar of the currently loaded Slide is highlighted in color.

Media Control Bar



As soon as you click on a Layer, the Media Control Bar appears at the bottom of the Layer. This bar differs depending on the media type of the Layer. The different functions of the Media Control Bar are described in more detail in the Media Control Bar chapter.

Media Control Bar



After selecting a Layer on the Canvas, the corresponding Media Control Bar appears at the bottom. By clicking on the thumbnail, next to which the name of the selected Layer is also displayed, you can hide or show it.

The elements on the right and left edges of the Control Bar are the same for Layers of all media types:



Removes the selected Layer from the Canvas.

Transparency

Sets the transparency level of the selected Layer, ranging from 0% to 100%.

Rotate

Rotates the selected Layer counterclockwise in 45° steps. For Audio Layers and Video Source Layers with Aquilon/Spyder Pixel Processor no rotation is possible and this button is hidden.

Background Color

Allows you to change the background color of the Layer. The background color is displayed for Layers with a transparent background or for Layers whose aspect ratios are different to the Canvas or Section when full-screen mode is enabled.

The Color Picker provides the following choices of a color including alpha: HEX, RGB, HSV and an eyedropper \mathcal{T} , which can be used to select colors of the current content and the UI with pixel precision. In the lower area color presets can be added with +, removed with \times and applied by clicking on a preset. These can also be defined in advance in the the X-Manager (administrator rights required). They are not synchronized between the X-Creators.

Section Fullscreen

Displays the selected Layer at full size in its Section while keeping the aspect ratio. Clicking again restores the original size. If there is no Section or only one that is congruent with the Canvas, the behavior is analogous to the

fullscreen button.

X tr Fullscreen

Displays the selected Layer in full-screen mode. The Layer is enlarged to the full size of the Canvas while the aspect ratio is maintained. Clicking again restores the original size.

Audio

Audio Layers are hidden by default after being added and must be selected via the Layerlist or set visible there and then selected on the Canvas to show the Media Control Bar.

Play/Pause

The audio clip is played or paused.

Time Slider

Shows how much of the audio clip has already been played. In addition, the elapsed time is displayed on the left and the length of the audio clip on the right. It is possible to jump to time points in the audio clip by moving the slider.

口か Volume

Opens a slider that can be used to adjust the volume. Clicking on the 40/30 icon mutes the audio clip or sets it back to the previous volume.

Loop

Allows to set the audio clips playback mode. If this button is active, the clip will start from the beginning again after it finishes playing. If this button is disabled, the audio clip will be stopped after playing and set to the beginning.

Image

7 Trigger

A trigger can be assigned to the Layer, which then calls up the next Slide or an Experience previously defined in the X-Manager when the image is clicked. If a trigger is assigned to the image, the $\[\[\] \]$ icon appears in the upper right corner of the Layer.

Stereo

If the 3D Stereo module is active, this button is displayed, with which the Stereo Mode of the Layer can be enabled, if the image available in stereo.

Shape

Locks the aspect ratio of the layer to ensure shape is not warped if not wanted. Enabled by default.

Color

Opens the Color Picker, which can be used to set the shape color. The Color Picker provides the following choices of a color including alpha: HEX, RGB, HSV and an eyedropper \nearrow , which can be used to select colors of the current content and the UI with pixel precision. In the lower area color presets can be added with +, removed with \times and

applied by clicking on a preset. These can also be defined in advance in the X-Manager (administrator rights required). They are not synchronized between the X-Creators.

PDF

> Previous/Next Page

Allows you to navigate to the previous or next page of the PDF document.

← → First/Last Page

Jumps to the first or last page of the PDF document.

Page Slider

Displays the position of the current page in the PDF. To the right, the current and the total page number of the PDF are displayed. By moving the slider or clicking on it, you can navigate through the PDF.

当 Interaction

Activates the interaction mode. The layer can no longer be moved or scaled, but the user scrolls through the PDF with the mouse or by touch. If another page change is triggered on the last page of the PDF, the interaction mode is automatically deactivated and the slide navigation is active again.

NDI® Stream

Opens a slider that can be used to adjust the volume of the stream. By clicking on the (1) (2) icon the stream can be muted or set back to the previous volume.

Stereo

If the 3D Stereo module is active, this button is displayed, with which the Stereo Mode of the Layer can be enabled.

Color Space

Opens a drop-down menu that allows you to specify the color space in which the stream is received. RGB results in better image quality, but requires slightly more bandwidth. YUV provides slightly worse quality at lower bandwidth and is suitable when not enough performance is available.

Resolution

Opens a drop-down menu that allows you to specify the resolution at which the stream is received. At High-Res the stream is received in full resolution. At Low-Res the width is reduced to 640 pixels and the height adjusted depending on the aspect. Thus Low-Res offers itself on devices with less performance or if many streams are received in one Slide.

光 Remote Control

Displayed when the received stream is from an X-Stream application. If the function is activated, the mouse and keyboard of the computer sending the stream can be controlled as soon as the Layer is clicked. Clicking outside the Layer will stop the transmission. If the transmission is active, this icon is also displayed in the upper right corner of the Layer.

PTZ-Camera Control

If the received stream is from a PTZ camera, the following additional functions are available:

←L→ Move

Opens a joystick that can be used to move the camera.

Zoom

Opens a menu with two buttons that can be used to adjust the zoom of the camera.

Focus

Opens a menu with three buttons that can be used to adjust the camera's focus and activate autofocus.

Exposure

Opens a menu with three buttons that can be used to adjust exposure and activate auto-exposure.

Preset 1, 2, 3

Open a menu with two buttons. can be used to save the current camera setting as a preset. The other one is either to call up a saved preset or to remove the selection. The selected preset is highlighted by being underlined and saved with the Slide. So when loading the Slide the preset, set in the Layers, is loaded on the camera.

Attention: Presets are not stored in the software, but on the camera. This means that they can be overwritten by other programs or lost for some other reason (e.g. reset of the camera). Then when loading a preset via the X-Creator, the settings with which it was overwritten are loaded or nothing happens if the preset was deleted.

Text

A Font

Opens a drop-down menu that allows you to specify the font of the text. By default the fonts Arial, Times New Roman, Ubuntu and Gotham are available. Additional fonts can be uploaded for an Environment.

Font Color

Opens the Color Picker, which can be used to set the font color. The Color Picker provides the following choices of a color including alpha: HEX, RGB, HSV and an eyedropper \mathcal{O} , which can be used to select colors of the current content and the UI with pixel precision. In the lower area color presets can be added with +, removed with \times and applied by clicking on a preset. These can also be defined in advance in the the X-Manager (administrator rights required). They are not synchronized between the X-Creators.

A↓ A↑ Font Size

Adjusts the font size. The current font size is displayed between the buttons. The percentage value indicates the relative size of the font in relation to the Canvas.

 $\equiv \equiv \equiv$ Horizontal Alignment

Sets the horizontal alignment of the text. Left-aligned, right-aligned, or centered.

 $\triangleq \overline{\Rightarrow} \stackrel{\triangle}{=} Vertical Alignment$

Sets the vertical alignment of the text. Top-justified, bottom-justified, or centered.

当 Interaction

Activates the interaction mode. The Layer can no longer be moved or scaled by a pinch gesture or with the right

mouse button, but the text can be edited directly.

Video

The video will be played or paused.

Time Slider

Shows how much of the video has already been played. In addition, the elapsed time is displayed on the left and the length of the video on the right. By moving the slider it is possible to jump to time points in the video.

Opens a slider that can be used to adjust the volume. By clicking on the (3) (3) icon, the video can be muted or reset to the previous volume. The mute button is also located in the upper right corner of the Video Layer.

\hookrightarrow Play Mode

Allows you to set the playback mode of the video. By default videos are set to Loop (and start again from the beginning as soon as they have finished playing. With Reset after Play (a video is stopped after playing and set to the beginning whereas Play to End) stays at the last frame. Forward Slide >>> loads the next Slide as soon as the video finishes.

© Stereo

If the 3D Stereo module is active, this button is displayed, with which the Stereo Mode of the Layer can be enabled, if the video is available in stereo.

Timecode

If the Video Timecode module is active, this button is displayed, with which the current video time is sent to the configured receiver. If the button is activated, the video will be stopped and the time will be set to 0. Furthermore the play mode is set to Play once. When the video is played now, the current time of the video will be sent. The timecode function is not saved in the Slide and must be activated manually when the Slide is reloaded.

Video Source

口》 Volume

Opens a slider that can be used to adjust the volume. By clicking on the significantly icon, the video source can be muted or reset to the previous volume.

Color Space

Opens a drop-down menu that allows you to specify the color space in which the video source is received. RGB results in better image quality, but requires slightly more bandwidth. YUV provides slightly worse quality at lower bandwidth and is suitable when not enough performance is available.

Frame Skip

Opens a drop-down menu to set the frame rate at which the video source is received. With No Frame Skip the source is received in full frame rate, with 1 Frame Skip only every 2nd is frame received, with 2 Frame Skips every 3rd and with 3 Frame Skips every 4th frame. With this setting performance can be saved, e.g. if several high-resolution video sources are received at the same time.

Stereo

If the 3D Stereo module is active, this button is displayed, with which the Stereo Mode of the Layer can be enabled, if the video source is available in stereo.

Audio/USB Routing

If audio and/or USB routings have been set up in the X-Manager (prerequisite is the integration of corresponding systems, e.g. Crestron or Audio DSP), further functions are available which are displayed in the Control Bar:

d) Audio

Enables/disables audio from the selected source. Audio routing is limited to one source at a time. If audio was previously enabled on one video source and is now enabled on another, the first will automatically lose audio routing.



Enables/disables USB routing from the selected source. Several free slots can be defined in the X-Manager to activate USB routings for several sources at the same time.

Web

\leftarrow \rightarrow \bigcirc Navigation

Provide the standard functions of a web browser to go to the previous or next page in the history or to refresh the page.

URL

Displays the URL of the currently displayed page and allows users to edit the URL to load new pages. After input, confirm with enter to load the new page. The ? button to the right of the address bar deletes the current entry.

Allows to adjust the zoom of the browser window in 15% steps up to a minimum of 25% or a maximum of 500%. 100% corresponds to the display on a screen with HD resolution.

当 Interaction

Activates the interaction mode. The Layer can no longer be moved or scaled by a pinch gesture or with the right mouse button, but can be interacted with directly on the Layer using the web browser. All mouse inputs on the Layer are passed on to all other X-Creators, while keyboard inputs are not synchronized. Only one X-Creator can have the interaction mode activated on a web Layer. When it is activated, it is deactivated on all other X-Creators.

Delete Cookies

Deletes all cookies from the browser. This means that all logins will be lost and all cookie dialogs will reappear.

Fixed Resolution

Only displayed if a fixed web browser resolution has been configured for this X-Creator in the X-Manager. This resolution can be activated with this button for the respective Web Layer, so that the Layer does not have to be reloaded when its size is changed.

3D Asset

>/[] Play/Pause

If an animation is present in the selected 3D asset, it will be played or paused.

र्भुं Interaction

Activates the interaction mode. The Layer can then no longer be moved or scaled by a pinch gesture or with the right mouse button, but it can be interacted directly with the 3D Asset on the Layer. The left mouse button is used to rotate the asset and the right mouse button is used to zoom in/out the content.

Stereo

If the 3D Stereo module is active, this button is displayed, with which the Stereo Mode of the Layer can be enabled, if the 3D Asset is available in stereo.

• NDI® is a registered trademark of NewTek Inc.

Media Layer

All media added to a Slide are displayed on Media Layers.

Select

Clicking on a Layer with the mouse or touch selects it and the Media Control Bar appears. When the Control UI is active, any selection can be deselected by clicking on a free space on the Canvas. In the Visualization UI, the selection disappears automatically 8 seconds after the last interaction with the Layer.

Move

By holding and dragging, the Layer can be moved, with the limitation that at least one point of the Layer must always be on the Canvas.

Scale

By holding the right mouse button and dragging or using a pinch gesture, a Layer can be scaled from the center point evenly in all directions. In addition, the handles in the corners of a Layer can be used. When these are used, the opposite corner remains static and the Layer is scaled from there. For Web and Text Layers, the aspect ratio of the Layer can also be changed in this way; for all other Layers, the aspect ratio is fixed and determined by the content of the Layer.

Crop

Using the handles in the middle of each edge of a Layer (except PDF, Text, Cluster Video Sources), the Layer can be cropped so that only a section of it can be displayed. This way the Layer can be cropped to a minimum of 20% of the height and width. Cropped content is not lost but can be restored by dragging the handles back to their original position. Trimmed edges are indicated by a white colored border around the handle.

Placeholder

If the display of a media type in the X-Manager is disabled for this X-Creator, only a preview image is shown on the Layer instead of the media. If there is no preview image, such as for NDI® streams or video sources, a placeholder is displayed. If the media has not been downloaded yet, the loading fails or an NDI® stream or video source is not accessible, the preview image or a placeholder is also displayed. In the first two cases, "Downloading" or "Loading Failed" is additionally displayed on the Layer.

• NDI® is a registered trademark of NewTek, Inc.

Canvas

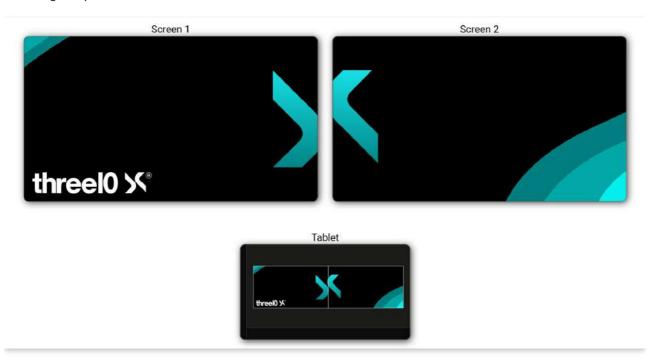
Setup

The Canvas describes the actual display surface on which the various Media Layers are displayed. Via the X-Manager an Environment Canvas is created and a Display Area is defined for each X-Creator(administrator rights required).

When an X-Creator is configured with the Control UI, the Display Area is usually congruent with the Environment Canvas to access and control all content.

If there is only one X-Creator with Visualization UI in the Environment, the Display Area usually also covers the Environment Canvas. However, if there are several Visualization-X-Creators that are to display different content, their Display Areas are defined in such a way that they each cover a different part of the entire Environment Canvas. If the Display Area differs from any X-Creator of the Environment, a Section is usually created that displays the different Sections on the Canvas of the Control UI.

A simple setup would be an Environment with one Control-X-Creator on a tablet and two Visualization-X-Creators, each on a workstation with HD display. The Environment Canvas would then be two times HD (2560x720) with two 1280x720 sections each. The Display Area of the Control-X-Creator is congruent with the Environment Canvas. The X-Creators with the Visualization UI show only one section each (1280x720). This results in the following setup:



On the tablet, the complete Canvas of the Environment is visible and the sections show which content is on which screen and can be moved as desired. The HD screens each show half of the Canvas.

Resizable Canvas

If Resizable Canvas is activated for the X-Creator in the X-Manager(administrator rights required), you can use the Canvas as if it were a Layer when clicking on a free area. By holding the right mouse button and dragging or

the pinch gesture, the Canvas can be enlarged/reduced. The Canvas can then be moved with the left mouse button or by touch. In this way, individual sections can be displayed larger in order to better interact with very small scaled Layers, for example.

Modules

Depending on the activated modules in the X-Manager for the Environment and the X-Creator used, the user interface is extended by additional elements.

3D Stereo

If this module is activated, a stereo button is added to the Media Control Bar for the following Media Layers:

- 3D Asset
- Image
- NDI® Stream
- Video
- Video Source

Stereo Mode

Opens a dropdown from which one of the following values can be selected:

- Left/Right, Full resolution: Left and right images are lined up horizontally at full resolution
- · Left/Right, Half resolution: Left and right images are lined up horizontally at half width
- Top/Bottom, Full resolution: Left and right images are lined up vertically at full resolution
- · Top/Bottom, Half resolution: Left and right images are lined up vertically at half height

Crestron

If a Crestron is configured for the Environment, the X-Creator Sidebar is extended with buttons for Crestron presets and optionally Direct Controls.

Crestron Presets

Are provided by the Crestron and allow different room controls to be made, saved and loaded with a Slide. The presets are divided into categories and one or more presets can be activated per category. If a slide with saved Crestron presets is loaded, these are automatically executed.

Crestron Presets

Opens or closes the Crestron Preset Browser and allows you to de-/activate the presets to save them in a slide.

Crestron Connection Status

The Crestron Preset Browser also shows the connection status of the Crestron in the upper part:

- · Red: The Crestron is not connected
- Yellow: An attempt is being made to connect to the Crestron
- · Green: The Crestron is connected

Crestron Reconnect

If you click on the Crestron Connection Status, a dialog appears, with which a new connection attempt with the Crestron can be initiated.

Crestron Direct Controls

Allow controls to be made directly in the X-Creator Sidebar via the Crestron. Depending on the configuration, no or several Direct Controls are displayed directly in the sidebar under the slide menu and more are available in the Direct Controls Browser, which is called up via the More button. According to its function, a Direct Control is created as a Button, Toggle or Slider. Unlike the Crestron presets, the Direct Controls cannot be saved in a slide.

··· More Button

Opens or closes the Crestron Direct Controls Browser. The button is not displayed if no or no further Direct Controls are available.

Room Control

If the Room Control module is activated in the X-Manager for the Environment, the X-Creator Sidebar is extended by buttons for Room Control Presets and/or Direct Controls, depending on the configuration. This allows REST-, TCP- or UDP-commands to be sent via the X-Creator UI.

Presets

The Room Control presets are divided into categories and per category one or more presets can be activated to save them with the Slide. When a Slide with saved presets is loaded, they are automatically executed.

REST Presets

Opens or closes the Room Control Preset Browser and allows you to de-/activate the presets to save them in a slide.

REST Direct Controls

Allow to send REST-, TCP- oder UDP- commands directly from the X-Creator Sidebar using Buttons. Depending on the configuration, no or more Direct Controls are displayed in the Sidebar below the Slide Menu and more are available in the Direct Controls Browser, which is called via the More button. If Crestron Direct Controls are also available, the REST-, TCP- and UDP- Direct Controls are displayed below them. Unlike the presets, the Direct Controls cannot be saved in a slide.

... More Button

Opens or closes the REST Direct Controls Browser. The button is not displayed if no or no further Direct Controls are available.

Streaming

If the Streaming module has been enabled for the Environment in the X-Manager the Streaming Button is added to the Sidebar of the X-Creator. In the Streaming Browser the Display Area and the Sections configured in the Environment can be selected and streaming can be started or stopped. Once Streaming is started, the button changes to and on the Control-X-Creator the border and the name of the streamed Sections turn red. Additionally, a flashing recording icon is shown next to the Section name. If the Display Area is streamed the recording icon is displayed in its upper right corner.

The X-Creators, for which the Streaming module has also been enabled in the X-Manager, stream the selected Sections and/or Display Area via NDI®. Sections are only streamed by Visualization-X-Creators and the Sections must be visible in the Display Area of the X-Creator that should send the stream. A Control-X-Creator for which the

Streaming module has been enabled always streams the whole application even if Sections have been selected. The current streaming settings, being the selected Sections and if streaming is enabled, are saved automatically with every Experience and are restored when an Experience is joined.

• NDI® is a registered trademark of NewTek Inc.

Shortcuts

To simplify the operation of the X-Creator, the following key combinations can be used:

Ctrl + W

Show/hide Welcome Screen UI

Ctrl + Up arrow

Snap Welcome Screen window to fullscreen

Ctrl + Left arrow

Snap Welcome Screen window to left side

Ctrl + Right arrow

Snap Welcome Screen window to right side

Ctrl + Plus/Keypad Plus

Increase UI

Ctrl + Minus/Keypad Minus

Decrease UI

Ctrl + M

Turn on/off the mouse pointer

Experience

Delete

Delete the selected Layer

Page down/Right arrow

Next slide

Page up/Left arrow

Previous slide

Ctrl + S

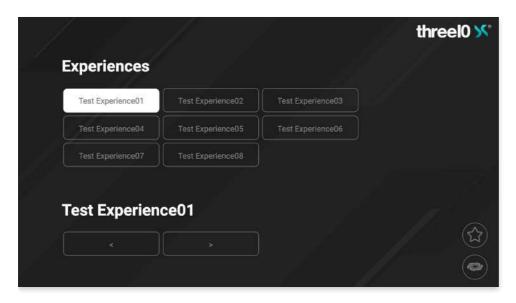
Save the current slide

Ctrl + F

Freeze

Tools

REST API - X-Web Control



By activating the REST API in the X-Manager and setting up the X-Web Control server as a Windows service or standalone application, the following functions are made available via a browser (default port: 9697):

- Sort Experiences by ☆ Favoriten-Status
- · Loading and exiting an Experience
- Switch slides back and forth (once an experience has been loaded)
- Displaying the Crestron X-Panel (Optional: only possible if a Crestron is integrated)

X-Service Tool

The X-Service tool can be used to start/stop X-Creator instances remotely in order to centrally control all X-Creators in an Environment (default port: 9698). Furthermore, a watchdog can be activated to automatically restart the X-Creator in the event of a crash. Log and crash files of all X-Creators can be downloaded via the 'Log' button.

X-Stream

With X-Stream, the screen content of a computer can be transferred via NDI® and displayed as a Layer in the X-Creator. In addition, the X-Creator can also be used to control the mouse and keyboard of the computer on which X-Stream was started.

After installation, there is a shortcut to the application on the desktop that can be used to start X-Stream. When X-Stream is started, the icon appears at the bottom right of the taskbar and it starts to transfer the screen. Clicking with the right mouse button opens the menu that contains the following functions:

Stream

Shows the name of the stream being sent

Cast Display

Turns the transmission of the screen on or off

High Framerate

If this function is enabled, the screen is transmitted at 60 frames per second and otherwise at 30

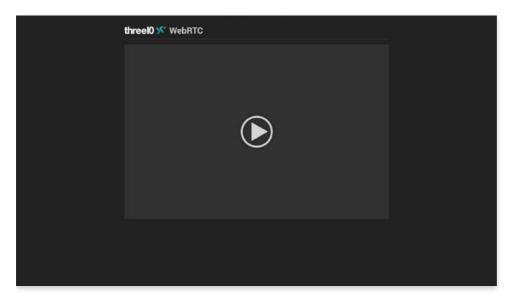
Cast Sound

This means that the output sound of the computer can also be transmitted. The sound alone can not be transmitted, only in combination with Cast Display

Show Notifications

If this function is activated, Windows notifications are displayed when the stream is started, stopped or when the stream is received from an X-Creator

X-WebRTC



By activating the Webrt module in the X-Manager for an X-Creator and setting up the X-Webrt server, a video stream of this X-Creator can be displayed in a browser (default port: 8080).

If the module is configured to transmit audio, only the sound of Audio and Video Layers is supported. For Video Layers, Media Foundation must additionally be set for playback in X Manager.

• NDI® is a registered trademark of NewTek Inc.

Installation

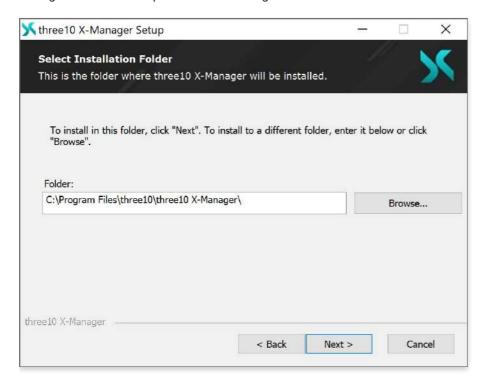
The installation is done via a standard installation routine.

During the installation the program Docker Desktop is required. Docker Desktop can be found here: Docker Desktop

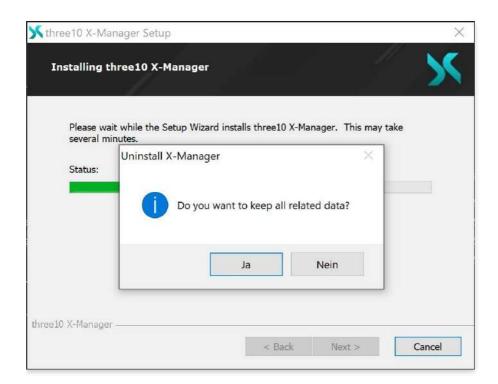
Docker Desktop requires CPU Virtualization. This function must be enabled in the BIOS.



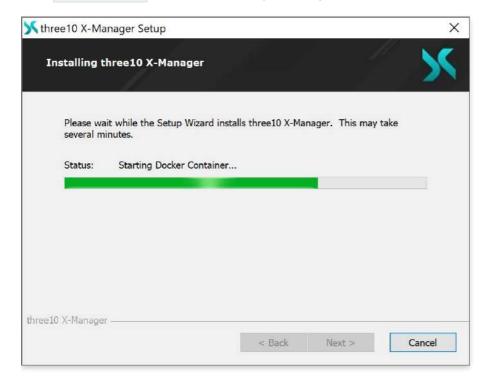
Change the installation path of the X-Manager.



When updating, you can decide whether to create a new installation or keep the old data.



Once Docker Desktop started, the X Manager is ready for use.



First steps

Entering the IP of the X-Manager in the browser (except Internet Explorer) displays the web interface.

IP Query: Execute the following key combinations on the computer on which X-Manager is installed:

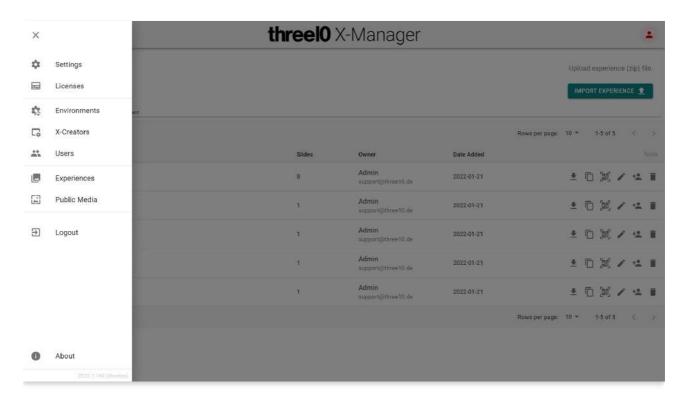
- Windows Key + R
- cmd
- ipconfig -> Read IPv4
- (Ex.: https://192.168.0.10)

If no external SSL certificate is installed, the initially installed certificate must be accepted. When the X-Manager is called up for the first time, a new user must be created which automatically receives admin rights. Later it is recommended to create further users and to use the admin user only for configuration purposes. The e-mail addresses used do not necessarily have to exist, as they are only used for authentication.



Navigation

The navigation can be opened using the hamburger menu \equiv in the upper left area.



Navigation with administrator rights

The navigation is divided into the following areas for users with administrator rights:



The X-Manager is configured under Settings

Licenses

All licenses are managed under Licenses. One license is required per Environment. Licenses can be moved to other Environments.

Environments

Under Environments, the technical specifications of the room and its functions are configured. (Modules, Fonts and Canvas)

The individual devices of an Environment are set up and managed under X-Creators.

Users

The users are the ones who use the Environment via the X-Creators. Corresponding users are created and managed in this area.

Navigation without administrator rights

The navigation is divided into the following areas for users without administrator rights:

Experiences

Under Experiences the presentations are created, filled and managed.

Public Media

The Public Media contains public media that can be uploaded independently of Experiences and used in the X-

Creator.

→ Logout

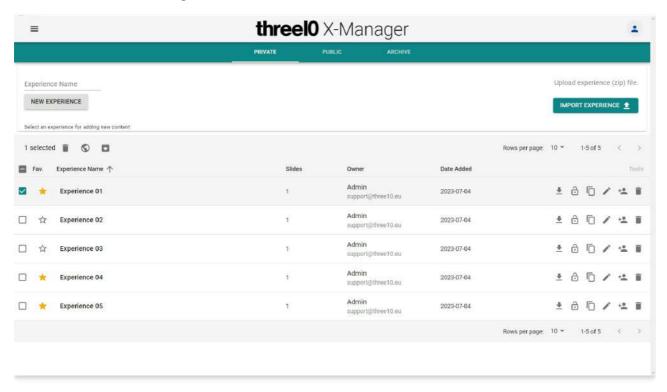
Logout of the current user.



The About button at the bottom left displays all third-party software licenses.

Experiences

Create and configure



After selecting Experiences via the side navigation, the Experience Overview is opened, which is divided into the three tabs Private, Public and Archive.

[!ATTENTION] The public feature has to be enabled by an administrator. If it's disabled all experiences are private by default and no tabs are shown.

In the private tab you can see all non-archived Experiences that the user is owner or member of.

The public tab displays experiences that can be accessed by all users, including those who are not logged in.

The archive contains all archived experiences for which the user has access rights. Archived Experiences are not displayed in the X-Creator. Also, the available actions for these experiences are restricted.

When one or more experiences are selected, icons appear that can be used to move the experiences between the different tabs. Experiences can only be moved by the owner, unless they are public, then by everyone.

Publish the selected experience. The experience is then displayed in the Public tab.

Unpublish moves the experience to the Private tab and the logged-in user becomes the owner of the experience.

▼ / ► Archive / Unarchive

Archive the selected experience. The experience is then displayed in the Archive tab.

Unarchive moves an experience back to the tab from which it was archived.

In the private and public tab Experiences can be created, edited or deleted. In addition, a PIN can be assigned to an

Experience as a 2-factor authentication. An Experience corresponds to a show or presentation.

The added media are only available for the Experience and also only visible to owner and the members.

New Experiences can be added in the upper area by entering an Experience name or imported by uploading a previously exported Experience. Each Experience created provides additional functionality:



Set this Experience as Favorite

▶ Download

Export and download this Experience with all content and settings

⊖ Pin

Set a 4 to 6 digit pin. Only available for Private Experiences.

☐ Duplicate

Duplicate this Experience

QR-Code

Create a QR code with which this Experience can be loaded

Rename

Rename this Experience

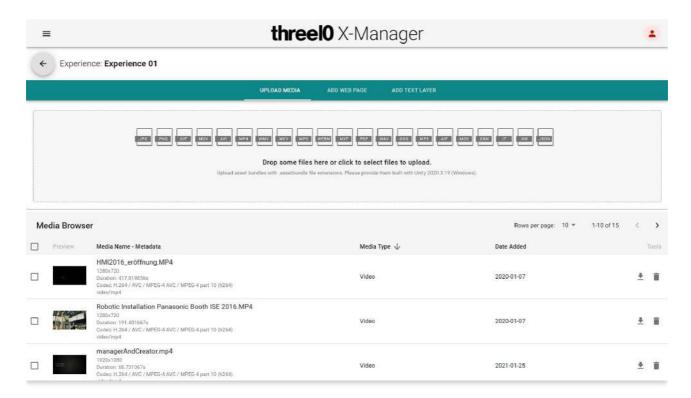
+≗ Add User

Manage members. These are users who have access to the content of the Experience. For members without admin rights the functions delete, view or change pin, rename as well as archive and publish are not available. This is only available for the owner of the Experience and the admins. Only available for Private Experiences.

Delete

Remove this Experience

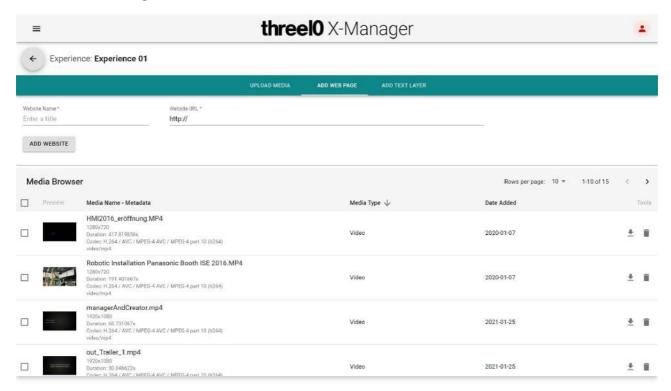
Upload Media



After creating an Experience, the Upload Media category is opened. New media can be added via drag and drop in the drop zone. Alternatively, clicking in the drop zone opens the Explorer to select supported files for upload.

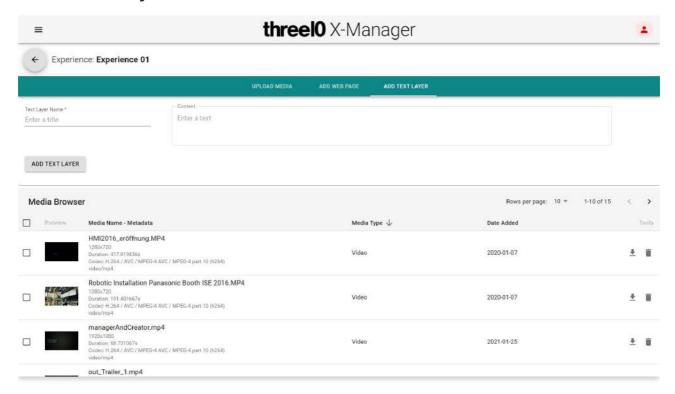
Furthermore, the already contained media are visible, which can be downloaded or removed.

Add Web Page



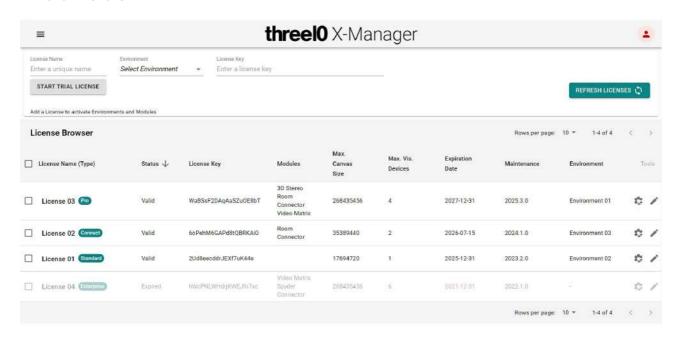
Web pages can be added with a name and a URL. Adding additional web pages or URL changes can be made directly in the X-Creator.

Add Text Layer



Text can be created with a name and the respective content. Adding additional Text Layers or changing content can be done directly in the X-Creator. Formatting (font, font size, alignment, color, ...) of the text can be found in the X-Creator and is saved per slide.

Licenses



To be able to use an Environment, a license must first be assigned to it, this is done via the License Page. When you purchase three10 X, you receive a License Key that must be entered in the corresponding field. Then a License Name, which can be freely selected, must be specified. Optionally, the Environment for which the license should be valid can be specified, but the license can also be assigned afterwards. The new license is then created by clicking the New License button. If the License Key is valid, the license appears in the License Browser.

Attention: To add a new license, an Internet connection must be available.

In the License Browser, a tag with the type of the respective license is displayed next to the name. The column contains the status of the license as well as further information about it. The license can be edited via the two buttons.



Rename this license



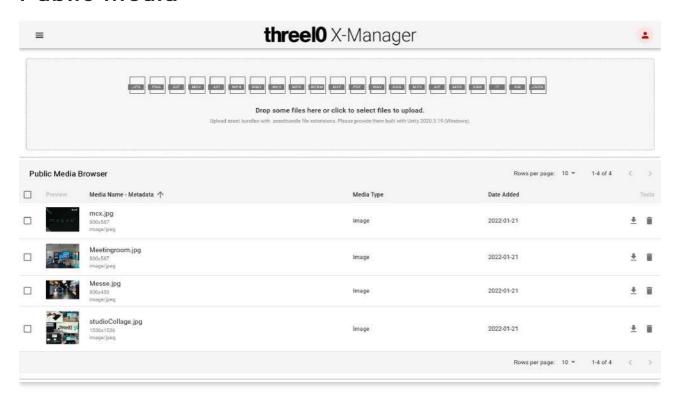
Assigning this license to an Environment

The Refresh Licenses to button in the upper right corner can be used to update the licenses, e.g. if an upgrade has been purchased. For this action the computer on which the X-Manager is running must also be connected to the Internet.

If an Environment is selected at an X-Creator that does not have a valid license assigned to it, an error appears indicating this.

To test the software, you can also create a one-time trial license by clicking the Start Trial License button. This license is valid for 30 days and has the features of a Pro license.

Public Media



Media can be uploaded or created in the Public Media Area in the same way as in Experiences. The media here are then not only available in one Experience, but can be used in all Experiences of this X-Manager. In the Media Browser, they are specially marked by being listed under the subheading Public Media.

Users



In the User Menu the users can be managed. A new user can be created via the <a href="Create User" continuous tab by entering an email address" continuous tab by entering an email address, a display name and a password and then clicking on the Create New User button. A new user initially belongs exclusively to the Users group. Users created in this way will be prompted to change the initial password and set their own after the first login.

All users are displayed with their display name, email and the groups they belong to. They can be edited via the buttons.



Changing the display name or password. Add or remove administrator rights.

Delete

Removing this user.

Each user can change their own display name and password in the Account Settings, which can be accessed by clicking the User button in the upper right corner.



On the login page you can log in with the created users. In addition, a new user can be created via 'Sign up' if this function has been released by an administrator.

In the 'PUBLIC MODE' you have access to all Public Experiences and Media and you can also add them without creating a user. This option is only available if it has been enabled by an administrator.