

## **Installation Manual**

Version 2.0.1033

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## **Visualization Control**

#### Polywall software: Information Visualization on Distributed Displays.

Control of information output and support of meetings, panels, conferences and workshop meetings in control centers, situation rooms, conference halls, panel and military board halls.

Any meeting will be efficient only if participants thereof see and perceive information. To achieve this, it should be prepared and visualized respectively. Information displaying control during the event is of no small importance as well. This process's being easy and fast saves your time and efforts when preparing and holding conferences, meetings and other events.

The Polywall was developed to solve tasks, such as:

- efficient management of practically all the operation modes for audiovisual systems, both in real time and under a scenario prepared beforehand;
- operational and simple control of information visualization modes from any quantity of various-type sources on any quantity of various-type display facilities;
- creating and saving non-linear meeting scenarios, which include states of all the hardware and software facilities at any time, as well as scenario calling and editing functionalities.

The diagram below demonstrates the basic **Polywall operating principle** – as simple visualization control as possible. Information from any source, whether standard audiovisual equipment or specialized software, can be displayed on any screens with maximum possible efficient use of their functionalities, considering ergonomic requirements and ensuring correct perception and easy data handling.



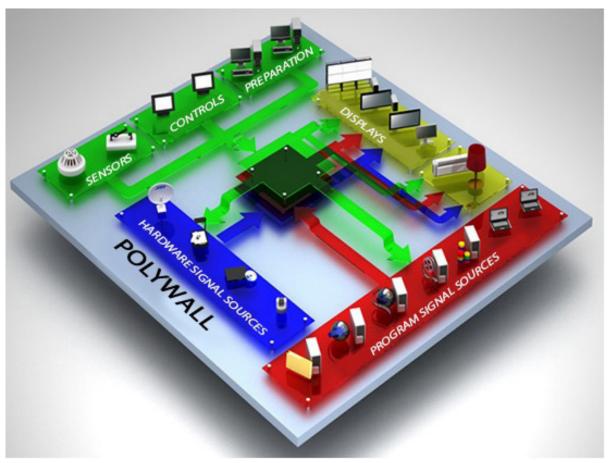


Organization of information output to the distributed display system

Facilities of this software complex:

- can be integrated in any audiovisual system with minimum modifications,
- provide a possibility of automated control for:
  - complex operation modes,
  - the state and functional interaction:
    - any audiovisual information sources,
    - videoconferencing facilities,
    - processing and switching facilities,
    - interactive system,
    - applied software.





Polywall complex operating principle

**Polywall** is a scenario-oriented complex; it allows the user to save the complex state at any time as individual scenes, of which sequences for demonstration – meeting scenarios – are generated.

### **Information sources**

The Polywall SW enables the user to show both Software and Hardware sources:

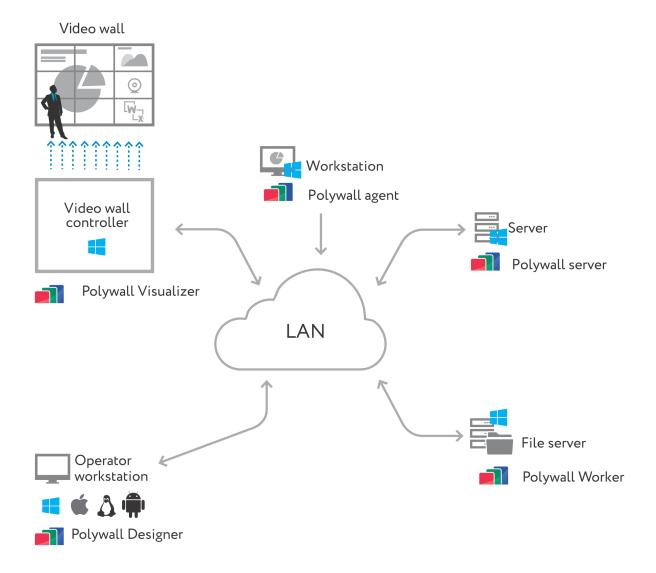
	Sources	POLYWALL	POLYWALL
			PRO
Software	MS Office (DOC, XLS, PPT, DOCX, XLSX, PPTX)	. ✓	
	Image (JPG, JPEG, BMP, GIF, PNG)	✓	✓
	Video (AVI, MPEG, WMV, 3GP, 3G2, MOV, MPG, MP4, FLV, MKV)		. ✓
	Ip-camera	. ✓	4
	Web-pages	1	<
	Video stream (RTSP, H.264)		<
	Remote desktop (VNC Viewer)		✓
	PDF	✓	✓
	Text	1	
	Application (EXE)	✓	✓
	Polywall Agent (Polywall VNC Server)	X	<
	Playlist (AVI, MPEG, WMV, 3GP, 3G2, MOV, MPG, MP4, FLV, MKV)	4	<



	Sources	POLYWALL	POLYWALL Pro
Hardware	Hardware RGB-source	✓	. ✓
	Computer, server station	4	<
	Video-conference communication terminal	4	<
	Document-camera	4	1
	Video camera (hardware video-source)	4	
	DVD-player	4	1
	TV-tuner	4	1

## **POLYWALL STRUCTURE**

Polywall consists of three critical components and one extra. All of them interact with each other in LAN. Each component is responsible for its specific task.





The diagram reflects all possible nodes with Polywall components.

First of all there is a video wall (in this particular case with 9 cubes which total resolution is 5760x3240). Video wall is connected to a video wall controller on Windows OS with professional graphic cards.

**Polywall Visualizer** component is responsible for opening a content in proper place with proper size. This component must be installed on the video wall controller (display facility computer).

**Polywall Server** is the main component and establishes connections between all Polywall nodes. License key is bind to Polywall Server component and Polywall Designer web interface is located inside this component as well.

Polywall Worker shares a content for Polywall from any Windows based machine.

Polywall Agent is extra component which purpose is mirroring Windows PCs desktops.

**Polywall Designer** is not a component but Polywall control web interface to manage whole system.Polywall Designer can be run in compatible browser (Chrome, Mozilla) on any OS and device.

Meanwhile Polywall Server, Visualizer, Worker and Agent are compatible with Windows only.

## **Recommendations for installation of Polywall components**

Name	Minimum requirements
Server	Operating Systems:
	<ol> <li>Windows Server 2008 R2</li> <li>Windows Server 2012 R2</li> <li>Windows 7 Pro x64</li> <li>Windows 7 Ultimate x64</li> <li>Windows 8 Pro x64</li> <li>Windows 8.1 Pro x64</li> <li>Windows 10 Pro x64</li> </ol>
Visualizer	Operating Systems:
	1. Windows Server 2008 R2 2. Windows Server 2012 R2 3. Windows 7 Pro x64 4. Windows 8 Pro x64 5. Windows 8.1 Pro x64 6. Windows 10 Pro x64
<b>X</b> 47 <b>1</b>	Microsoft Office 2007 – 2016.
Worker	Operating Systems: 1. Windows 7 Pro x64 2. Windows 7 Ultimate x64 3. Windows 8 Pro x64 4. Windows 8.1 Pro x64 5. Windows 10 Pro x64

### NOLYWALL

The Server can be installed both on a video wall controller and on an individual computer. We recommend you to install the Server on an individual computer in case when the Polywall is required to control several video wall controllers.

The Worker shall be installed on all computers that are supposed to be the files sources to be displayed.

The Visualizer shall be installed on each computer being a video wall controller.

After installation and setup of all Polywall components, the operator shall start the Polywall web-interface (Designer) on his/her computer.

Warning! Polywall components versions must be the same!

## Network constraints

Warning! Server, Visualizer and Worker must be in the same network and be accessible to each other.

Please pay attention to any side software which can occupy Polywall ports or block Polywall component interactions (antiviruses, firewalls, endpoint security).

## Hypervisor constraints

Warning! Polywall software is not compatible with VirtualBox virtual machines.

## **POLYWALL INSTALLATION**

## **Standard configuration**

- The Server, the Visualizer and the Worker are installed on the same computer.
- The operator controls the Server content from his/her computer, showing the content from the Server PC.

To install and set up the standard configuration, the **Polywall Kit** shall be installed; and after installation of all the components, they shall be set up using the **Wizard** configurator.

## **Advanced configuration**

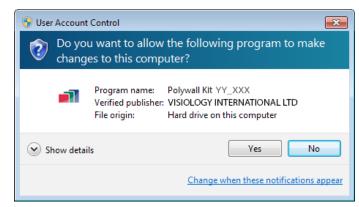
- The Server, the Visualizer and the Worker are installed on the same computer (like in **Standard configuration**).
- The Vizualizer and the Worker can be installed on other computers located within the same local network as the Server (with **Polywall Kit** it is easy to install one or two different Polywall components separately).
- The operator controls the content of the Server and other display facilities (with Visualizer SW installed) from his/her computer to show the content from the Server PC and other PCs (with Worker SW installed).

### **Component selection**

1. Launch the file '**Polywall Kit YY XXX.exe**'. Here, '**YY**' is a language code value, and '**XXX'** is a build number.



2. Allow the program to make changes on this computer.



### 🗃 POLYWALL

- 3. Select a language for the Polywall Designer interface:
  - Arabic,
  - Chinese,
  - English,
  - French,
  - German,
  - Italian,
  - Portugal,
  - Russian,
  - Spanish,
  - Turkish.
- 4. Choose all necessary components for installation. Wizard will only be installed with the Server.

Press 'Next'.

To visualize some sources, applications as follows are required: *VLC Player* and *eXPert PDF ViewerX*. If these applications are not installed on the computer, they will be installed automatically.

5. Please follow on-screen instructions.

Press 'Install'.

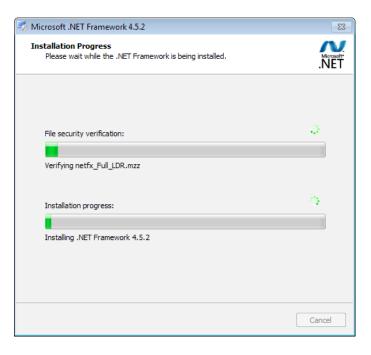
Polywall 2.0 Setup	
Select language: English	T
Cancel Nullsoft Install System (Unico	de)

Polywall 2.0 Setup: Installation O	otions	- • •
Check the components you way you don't want to install. Click		the components
	Microsoft .NET Framew Server Visualizer Worker Wizard	vork.
Space required: 414.7MB		
Cancel Nullsoft Install System	(Unicode) < Back	Next >

Polywall 2.0 Setup	- • •
Polywall core components and prerequisites will now be install on-screen instructions. You can keep default settings in all ins After the installation is finished the Polywall Configuration Wiz	tallers.
Cancel Nullsoft Install System (Unicode) <bac< td=""><td>k Install</td></bac<>	k Install

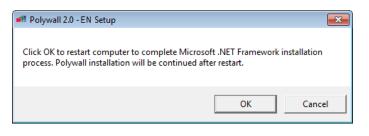


6. If the *Microsoft .NET Framework* software platform, version *4.5.1* or higher, is not installed on the computer, it will be installed automatically during Polywall installation.



If such a message will pop up after *Microsoft* .*NET Framework* installation, press '**OK**'.

Warning! After 'OK' is pressed, Windows will reboot. Right after system boot, the **Polywall Kit** installer will start automatically. Repeat steps 2,3,4,5. With this, Polywall installation will continue.



### **Server Installation**

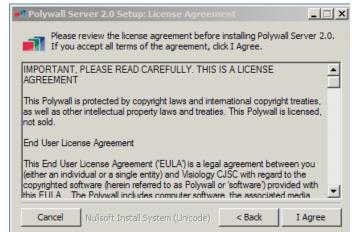
Install the Server using on-screen instructions:

Confirm language selection for Server installation by pressing '**Next**'.

Polywall Server 2.0 Setup	- • •
Select language:	
English	<b>v</b>
Cancel Nullsoft Install System (Unicode)	Next >



Confirm that you accept the license by pressing 'I Agree'.



Wait till the component installation is complete.

Press 'Next'.

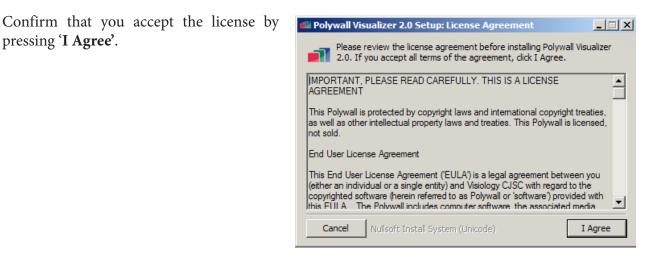
Polywall Server 2.0 Setup: Completed	
Completed	
Show details	
Cancel Nullsoft Install System (Unicode) < E	Back Next >

Close the Server installation window by pressing 'Close'.

Polywall Server 2.0 Setup	
Congratulations! Setup is complete!	
Cancel Nullsoft Install System (Unicode)	< Back Close

## **Visualizer Installation**

Install the Visualizer using on-screen instructions:



Choose a directory to install the Visualizer by pressing '**Install**'.

Polywall Visualizer 2.0 Setup: Installation Folder	- • •
Setup will install Polywall Visualizer 2.0 in the following different folder, dick Browse and select another folder the installation.	
Destination Folder	
C:\Program Files (x86)\Polywall\Polywall Visualizer 2.0	Browse
Space required: 180.2MB Space available: 392.1GB	
Space available: 552.100	
Cancel Nullsoft Install System (Unicode) < Bad	( Install

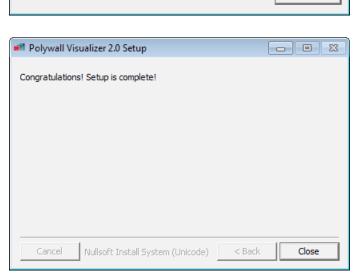
Wait till the component installation is complete.

Press 'Next'.

Polywall Visualizer 2.0 Setup: Completed	
Show details	
Capital Mullicoft Testall Gustans (Unicoda)	Rack Next >
Cancel Nullsoft Install System (Unicode) <	Back Next >

If such a message appears during PolywallVisualizer 2.0 - EN Setup installation, press 'OK' and, after all the Polywall components are installed, install Please install Microsoft Office to use Word, Excel and PowerPoint showing features before launching Polywall Visualizer 2.0 Application! the Microsoft Office 2007 - 2016.

Close the Visualizer installation window by pressing 'Close'.



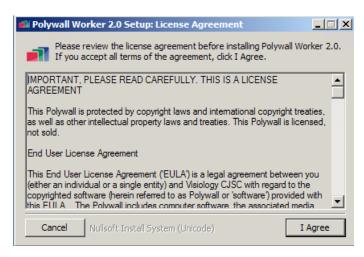
x

ОК

### Worker Installation

Install the Worker using on-screen instructions:

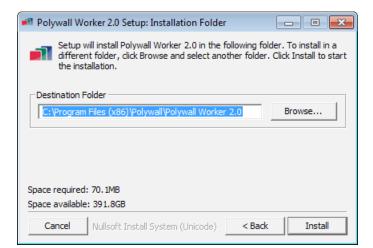
Confirm that you accept the license by pressing 'I Agree'.





Select the directory to install the Worker.

Press 'Install'.



**PRO 'Encrypted connection'** - establishment of secured connection (https://...). In case of encrypted connection installation Worker cannot work untill all other Polywall components will be set with encrypted connection.

Press 'Install'.

Polywall Worker 2.0 Setup	- • -
Installation options	
Encrypted connection	
When installing an encrypted connection, you need to make a configuration of the complex for its proper work.	dditional
Cancel Nullsoft Install System (Unicode) < Bad	Install

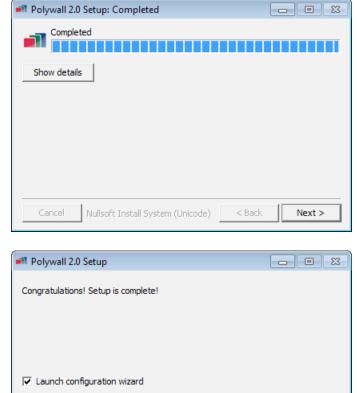
Wait till the component installation is complete.

Press 'Close'.

Polywall Worker 2.0 Setup: Completed	
Completed	
Show details	
Cancel Nullsoft Install System (Unicode) <	Back Close

## **Completing Installation**

Close the Polywall installation window by pressing 'Next'.



Nullsoft Install System (Unicode)

After all the Polywall components are installed, make sure that the 'Launch configurator wizard' checkbox is selected.

Press 'Close'.

After **Polywall Kit** is installed, shortcuts will appear on the desktop:

- 'Designer' the web-interface loaded in *Mozilla Firefox* or *Google Chrome* for handling display facilities.
- 'Server Settings' Server's settings.
- 'Server Restart' restart the Server. After any changes in settings are made, restart the Server.
- **'Visualizer'** start the Visualizer (if the Visualizer is already running, it will be restarted).

Cancel

- 'Visualizer Settings' Visualizer's settings.
- 'Configuration Wizard' setup Wizard.





Close



### 🗃 POLYWALL

## WIZARD SETTINGS

Wizard can be used to change the basic settings and restart Polywall components installed together with the Wizard.

To start Wizard, make sure that the 'Launch configurator wizard' checkbox is selected after Polywall Kit Installation, or launch the file 'Configuration Wizard'.



**'Polywall Configuration Wizard'** will appear on the screen.

Press '**Next'** to begin working with the configurator.



To get the license, send an email to

**POLYWALL@VISIOLOGY.COM** the **'Hardware ID'** that appeared on the screen. Enter the license code received in the **'License code'** field.

Press 'Next'.

🚅 Polywall Configuration Wizard	<u> </u>
Enter license Please enter valid license key	
Hardware ID:	
vE7fDViCLNVUYunTn5ewJVJcNxRAUtBBgrXdxKctzBVLNgiIhXcoFKDXCuNqGkrs	Сору
Send this Hardware ID to <u>POLYWALL@VISIOLOGY.COM</u> in order obtain your 30-da evaluation license key. Please contact your dealer to obtain a full Polywall license ke a valid corporate email address, as the license key is sent via email. Public emails (h Yahoo, Gmail etc.) will not be accepted.	y. Use
License key:	
Cancel < Back Next >	Finish

Make necessary settings to display the content on the display:

- Select the number of video cubes horizontally and vertically.
- **'Grid-spacing'** frequency of a grid in separate display cube.
- 'Video wall layout' source displaying layout.
- **'Hide Windows desktop on video wall'** it allows the user to hide desktop icons and the Windows control panel, as well as to replace the background picture with the black color during Visualizer operation.
- **'Start Visualizer application on Windows startup'** - it enables the Visualizer application to be launched when Windows starts.

Press 'Next'.

Select the Server's IP address.

If you want to control the Server from another PC, select the IP address different from localhost ('127.0.0.1').

If Polywall components are to be installed on other computers, select that IP address which will be in the shared local network with these components.

Press 'Next'.

Polywall Configuration Wizard	
Visualizer configuration Please configure Visualizer application	
Please choose display facilities layout	
+ 2	Available layout presets: 1x1 2x2 2x3 3x2 3x3
Grid spacing: - 1 +	4x1 4x2
Hide Windows desktop on video wall (Alt-F4 will b Visualizer).	e required to exit Polywall
Start Visualizer application on Windows startup.	
Cancel < Ba	ack Next > Finish

Polywall Conf	iguration Wizard	- • •
Set Server IP a Please prov	address ide IP address of computer where Polywall Server is ir	nstalled
Please select Polywall.	the IP address of the network interface you plan to u	se to manage
IP address:	192.168.179.128	
	Cancel < Back Ne	ext > Finish



Select Designer interface language.

Polywall Configuration Wizard	
Localization	
Please select designer interface language.	
Language: English -	
Cancel < Back Next	Finish

Press 'Finish' to exit the Polywall Configuration Wizard.

Now you can control the content on the Server computer if the option '**Encrypted connection**' was not checked.

To manage the content on the Server display, open *Mozilla Firefox* or *Google Chrome* on any computer which is within the shared local network with the Server, and enter the following in the address bar

'http://IP-address\_of\_Server:8080/polywall/designer'.

Polywall Configuration Wizard	- • ×
Polywall is now configured	
Press Finish to launch Visualizer.	
Launch website "http://192.168.179.128:8080/polywall/designer" in Fire any computer in the network.	ox browser on
Cancel < Back Next >	Finish

Warning! To ensure correct Server operation, port 8080 should be free.

Warning! If 'Encrypted connection' was checked, see 'Https set up'.

### NOLYWALL

## **SETUP OF THE POLYWALL**

## Server Setup

So that the Designer could run correctly, please install *Mozilla Firefox* or *Google Chrome* and make it the default browser.

To change Server settings, press the Server Settings shortcut on the desktop.

Server settings consist of 6 tabs:

'Rooms' – the tab that contains settings of the room and its equipment.

**'Repositories'** - the tab contains IP-addresses of computers and folder directories with required files.

**'License'** - the tab contains the license key and information on the quantity of days remaining until license expiration.

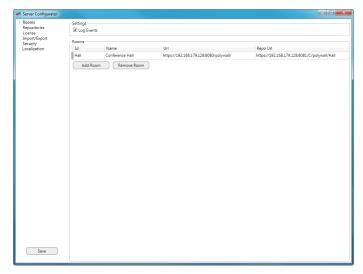
'Import/Export' - the tab contains settings import and export functions.

**PRO** 'Security' - contains user access settings.

'Localization' - language configuration of the Designer interface.

#### Rooms

**Room** – is a group of one or several display facilities on which information management and demonstration can be connected logically. The feature is under development and not available now.



#### **PRO** Event logging

Check the box in field '**Log Events'** to create file with event records in date order.

Log file with records is stored at:

<ul> <li>Rooms</li> <li>Repositories</li> <li>License</li> <li>Import/Export</li> </ul>	Settings V Log Even	nts		
Security	Rooms			
Localization	Id	Name	Url	Repo Url
	Hall	Conference Hall	https://192.168.179.128:8080/polywall/	https://192.168.179.128.8081/C/polywall/Hall

'C:\Program Files\Polymedia\Polywall Server 2.0\tomcat\logs'.

#### **Room settings**

A **red field** means an unfilled mandatory field or a field the content of which does not comply with filling rules.

If there is a rule for filling, it will pop up when the cursor is hovered over the input field.

Server Configurator				
Rooms Repositories License	Settings Log Events			
Import/Export Security	Rooms			
Localization	Id Name	Url	Repo Url	
	! <new room=""></new>			
	Add Room Remove	Room		
Save				
save				

Field	Value	Filling rule
Id	Room has its unique Id. The Id is user-defined. This Id is used to establish connection between the Server and the Visualizer.	English letters and numbers
Name	Room name.	English letters and numbers
Url	The Server address to be used for Room operation (to be used for Visualizer settings).	'http://IP-address_of_ Server:8080/Polywall'
	The Server address within the local network shared with the Visualizer and the Worker.	or 'https://IP-address_of_ Server:8080/Polywall' in case of secured connection at ' <b>Security'</b> tab.
Repo Url	The address of a folder that will contain scenarios to be demonstrated according to the schedule in this room. 'C:/polywall/Hall' is created by default. You can create your own folder and specify a path to it.	'http://IP-address_of_ Server:8081/Polywall/ Directory' or
		'https://IP-address_of_ Server:8081/Polywall/ Directory' in case of secured connection at ' <b>Security'</b> tab.
		The Directory shall be written as 'Disk/Folder/ Folder/'.

Warning! Polywall operates within one default room and there is no sense to create additional rooms!

Warning! All the fields are filled with default settings. Replace existing data with your data!



#### **Room equipment**

Open room equipment settings.

Rooms	Settings			License Add Displa Import/Export Security Remove Disc	Name	Value	Subregions Left part	Parameters	
Repositories	✓ Log Events			Security Localization Remove Disp	lay title	Display 1	Right part	Name	Value
License Import/Export					size	3200×1080	Add Subregion	title	Right part
Security Localization	Rooms Id Name	Uri	Repo Url		designer-size	3200×1080		left	1600
cocalization	Hall Conference Hall	https://192.168.179.128:8080/polywall/	https://192.168.179.128.8081/C/polywall/Hall		designer-position	10×10	Remove Subregion	top	0
	Add Room Remove Room		1.0		cubes	3x2		width	3200
					grid-spacing	2		height	1080
					auto-repo	true			
				Equipment Con	roller		192.168.0.2		
				port			9998		
				Matrix Configur Add Input	Input Id		Name 1	Matri 1	« Îd

Warning! All the fields are filled with default settings. Replace existing data with your data. Fill all the fields.

A window with settings of room properties is divided into 3 sections:

- '**Displays'** setup of parameters for the room's display facilities.
- 'Equipment Controller' setup of the equipment controller responsible for matrix change-over.
- 'Matrix Configuration' setup of switching matrices.

#### Displays

To add a display to the room, press 'Add Display'. Displays mean separate video wall controllers with Polywall Visualizers with their whole video walls. It is not one physical display.

To remove the selected display, press '**Remove Display'**.

**'Display Id'** - you should specify the display ID (number). This Id number is used to establish connection between the Server and the Visualizer.

<ul> <li>Rooms</li> <li>Conference Hall Repositories</li> </ul>	Displays Display 1	Display Id: 1					
License	Add Display	Parameters		Subregions			
Import/Export Security		Name	Value	Left part	Parameter	\$	
Localization	Remove Display	title	Display 1	Right part	Name	Value	
		size	3200x1080 Add Subregion	title	Right part		
		designer-size	3200×1080		left	1600	
		designer-position	10×10	Remove Subregio	n top	0	
		cubes	3x2		width	3200	
		grid-spacing	2		height	1080	
		auto-repo	true				
	- Equipment Controlle						
-	ip-address	r		192.168.0.2			
	port			9998			
	port			2220			
	- Matrix Configuration			1			
	Add Input	Input Id		Name		Matrix Id	
	Add input			1		1	
		1					
	Remove Input	1					
		1					
Save		1					

Add Display	Parameters		Subregions		
	Name	Value	Left part	Parameters	
emove Display	title	Display 1	Right part	Name	Value
	size	3200×1080	Add Subregion	title	Right part
	designer-size	3200×1080		left	1600
	designer-position	10x10	Remove Subregion	top	0
	cubes	3x2		width	3200
	grid-spacing	2		height	1080
	auto-repo	true			
ntroller Inputs —					
Add Input	Id		Matrix Output Id	Matri	x Id
Remove Input	1		1	1	

Warning! Make sure that there are no extra displays. Otherwise, these displays will be shown in the Designer with default settings.

#### 'Parameters' block

The '**Parameters'** block is responsible for properties of the display selected.

Name	Value
title	Display 1
size	3200x1080
designer-size	3200x1080
designer-position	10x10
cubes	3x2
grid-spacing	2
auto-repo	true

Field	Value	Filling rule
title	The display name to be shown in the Designer.	English and russian letters, numbers
size	<ul><li>Physical dimensions of the entire display (video wall) in pixels.</li><li>(To obtain information on physical dimensions (video wall) of the entire display, right-click on the computer desktop (with the Visualizer installed) and select 'Screen Resolution').</li></ul>	Number x Number
designer-size		
designer-position	itionCoordinate of the top left display corner in the Designer. To be defined by the user.Number x Number Number x Number For calculation of the top left corner coordinate for the display facility in the Designer, please see Appendix 1.	
cubes		
grid-spacing	The frequency of a grid in separate display cube.	Number
auto-repo	Generating of repository with display hardware inputs.	true or false



#### PRO Subregions

Subregions are designed to divide display into several areas.

Subregions are used for user access rights differentiation.

To add display Subregion press button 'Add Subregion'.

To remove the selected Subregion press button **'Remove Subregion'**.

eft part	Parameters		
Right part	Name	Value	
Add Subregion	title	Right part	
	left	1920	
Remove Subregion	top	0	
	width	3200	
	height	1080	

Field	Value	Filling rule
title	Subregion name.	English and russian letters, numbers
left	Original X coordinate of display Subregion.	Value (from zero to physical display width in pixel)
top	Original Y coordinate of display Subregion.	Value (from zero to physical display height in pixel)
width	Subregion width.	Value ( <b>left+width</b> shall be less than physical display height in pixel)
height	Subregion height.	Value ( <b>top+height</b> shall be less than physical display height in pixel)

Warning! Display size and Designer size must be the same for the correct operation of the subregions.

#### 'Controller Inputs' block

See the 'Controller Inputs' block after 'Matrix Configuration' and 'Equipment Controller'.

#### **Equipment Controller**

- **'Ip-address'** the IP address of the controller responsible for matrix change-over.
- **'Port'** the port of the controller responsible for matrix change-over.

If there are no matrices, leave fields with standard settings.

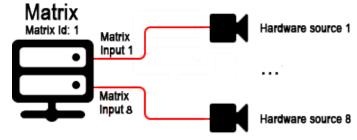
Warning! Names of hardware sources connected directly to the controller can be set in the Visualizer settings.

Ē	quipment Controller —	
	ip-address	192.168.0.2
	port	9998

#### **Matrix Configuration**

**'Matrix Configuration'** is responsible for hardware sources connected to matrices.

If there are no matrices, leave fields with standard settings.



#### Add/remove the matrix input

To add a matrix input, press 'Add Input'.

To remove the selected input, press '**Remove Input'**.

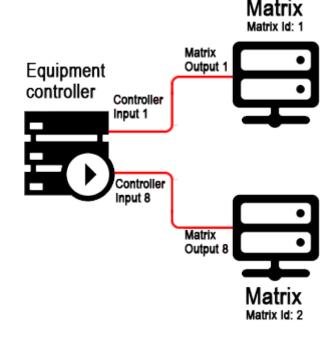
Matrix Configuration -			
Add Input	Input Id	Name	Matrix Id
	1	1	1
Remove Input			

Field	Value	Filling rule
Input Id	Matrix input number.	Number
Name	Input name. This name shall be understandable, as it will be displayed when the operator works in the Designer.	U
Matrix Id	Matrix ID. To be defined by the user. The Id is used for Server communication with the ' <b>Equipment Controller</b> '.	Number

#### 'Controller Inputs' block

**Controller Inputs** – establishing links between controller inputs and matrix switch outputs. Polywall on Matrox graphic cards is supported.

The **Controller Inputs** block contains nothing if there are no matrices.



Add/remove the link between a controller input and a matrix output

To add a link, press 'Add Input'.

To remove the selected link, press 'Remove Input'.

Controller Ir	nputs ——	
Id	Matrix Output Id	Matrix Id
1	1	1 •
Add Inp	ut Rem	ove Input

Field	Value	Filling rule
Id	Controller input number.	Number
Matrix Output Id	Matrix output number.	Number
Matrix Id	ID of this matrix.	Number

#### Repositories

Specify the computer IP-address and a path to the folder/disk required (the Worker shall be installed on the computer) to show later files in these repositories on displays.

ns	Repositories	
sitories	Name	Url
ise	Content	https://192.158.179.128:8081/C/PolywallContent/
ort/Export rity	Operator PC	https://192.168.46.72:8081/C/PolywallContent/
lization	Add Repo Remove Repo	(http://www.onten/
Save		
Jave		

#### Add/remove the Repository

To add a repository, press 'Add Repo'.

To remove the selected repository, press '**Remove Repo'**.

Name	Url	
Content	https://192.168.179.128:8081/C/PolywallContent/	
Operator PC	https://192.168.46.72:8081/C/PolywallContent/	



Field	Value	Filling rule
Name	The file storage name to be displayed when the operator works in the Designer.	English letters and numbers
Url	An address of the computer the Worker is installed on.	<ul> <li>Software sourses:</li> <li>'http://IP-address_of_Worker:port/ Directory'</li> <li>or</li> <li>'https://IP-address_of_Worker:port/ Directory'</li> <li>in case of secured connection at 'Security'</li> <li>tab.</li> <li>The Directory shall be written as 'Disk/ Folder/Folder/'.</li> </ul>

#### License

A license key received from the Polywall specialist is located in the 'License Key' field on the 'License' tab.

In case of using trial key, amount of remaining days will be displayed in red (near the field with licence key).

r License Key
YNYYSYYSIEUNINKAYLUwySHAOMMarbughamatXacuOQumAQQCXAGOGUHUCTRSUBERDAWCEBABMUUHUUJUGUTABAMUUHOHUMIa MUGGCXERAAwuwgyDahBQUybysAGUWACUMACAHAWAYQQMAAAAAWYQQMAAUgubaBAREBEIREBERSESYAUTAGOACAAGAAGAAHABHQOJ LId2QwKFLoQwLUwpXFNXWMMBmNbXUQMMAZUUw68ZULKS8XUUUEDVZXQLBXNAXUFg6CWYTCUULWTQTg9XbgsdSSFQUILSBwRjWQ==

### **Import/Export**

#### Export the settings

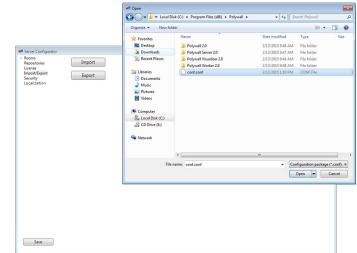
- 1. Press 'Export'.
- 2. Select the directory to save existing Server settings, enter a file name and press 'Save'.

	🕒 🗸 🖉 🖉	Disk (C:)  Program Files (x86)  Polywall	👻 🐓 Search i	Polywall
	Organize • New fo	lder		)II •
	★ Favorites	Name	Date modified Typ	pe Sia
	E Desktop	Polywall 2.0	2/13/2015 9:48 AM File	e folder
Server Configurator	Downloads	Polywall Server 2.0	2/13/2015 9:47 AM File	e folder
Rooms Import	Recent Places	Polywall Visualizer 2.0		e folder
License		Polywall Worker 2.0	2/13/2015 9:48 AM File	e folder
Import/Export Export	Ca Libraries			
Security Localization	Documents			
	Music     Pictures			
	Videos			
	- Hates			
	Computer			
	Sa Local Disk (C:)			
	CD Drive (E:)			
	🙀 Network	· [		
	File name: con	of		
		nfiguration package (".conf)		
	Sarcardpe Less	ingenerien peckage ( icenii)		
	Hide Folders		Sav	e Cancel

Warning! When copied settings are transferred, the license key will not be valid on another PC.

#### Import the settings

- 1. Press 'Import'.
- 2. Select a file with settings a file of the '\*.conf' format.
- 3. Press 'Open'.



Warning! Do not recommended to Import the settings from different version.

#### PRO Security

#### Secured connection

Check the box 'Enabled' in 'Encrypted connection (https)' block.

Rooms Repositories	Encrypted connection (https)	_
License Import/Export Security	C Enabled	

#### **Enable security**

Check the box '**Enable security**' to change user access settings.

Settings contain:

- list of users and their display control rights
- LDAP settings (when LDAP password is to be used for user log-in in Designer Polywall).

vanov mith	*******		
mith		Display	Subregion
	*******	Display 1	<ul> <li>Left part</li> </ul>
Add user R	lemove user	Add access Re	emove access
LDAP			
Name		Value	
connectionURL		Idap://1.1.1.1:389	
connectionName		domen\user	
connectionPassword		******	
userBase		OU=Company,DC=domen,D	C=office
userSearch		(&(objectCategory=person)(c	objectClass=user)(mailnickname={0}))

Warning! If the box 'Enable security' is checked, Designer Polywall interface will be loaded only after user log-in!

#### Add/remove user account

To add user account press 'Add User'.

To remove the selected user account press 'Remove User'.

Enter password to enable each account or set parameters to use LDAP authorization.

🗹 Enable security ————	
Login	Password
ivanov	*****
smith	******
Add user Remove use	er

ubregio Display

Display 1

Add access Remove access

Subregion

Left part

If LDAP authorization is used, account login shall match Active Directory login.

Field	Value	
connectionURL	Url for connection to domain controller (AD server).	
connectionName	User name for connection to AD server.	
connectionPassword	onnectionPassword User password for connection to AD server.	
userBase	Active Directory element filtering parameters.	
userSearch	Search pattern to select user name.	

C Enable s

Add user Remove user

......

Login ivanov

#### Add/remove user constraints

To add constraints to the selected user account press 'Add Access'.

Select relevant display and name of subregion the user can control.

To remove constraints from the selected user account press '**Remove Access'**.

Warning! If account is added but constraints are not defined, the user will be able to control all available displays!

#### Localization

Select Designer interface language.

Server Configurator		
Rooms Repositories	Localization	
License	Designer interface language: English •	
Import/Export		
Security Localization		
Localization		
Save		

### Save the Server settings

To save settings, press '**Save'** in the left bottom corner and restart the Server.

Server Configurator     Rooms		
Repositories	Import/Export	
License	Import	
Import/Export	Export	
Security Localization	Export	
	Configuration saved. Please, restart Server to apply it.	
	Ok	
	Ok	
Save		

Warning! After settings are saved, restart the Server by pressing 'Server Restart'.

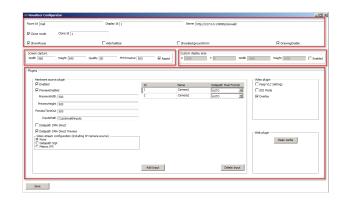
## Visualizer Setup

To change Visualizer settings, press the 'Visualizer Settings' icon on the desktop.



The Visualizer settings interface is divided into 4 parts.

- General settings.
- 'Screen capture' To set up transfer of the display desktop image.
- 'Custom display area'- Visualizer capture area.
- 'Plugins' To set up plug-ins.



### **General settings**

Room Id Hall	Display Id 1	Server https://192.168.179.12	8:8080/polywall/
🗹 Clone mode	Clone Id 1		
✓ ShowMouse	HideTaskbar	ShowBackgroundForm	DrawingEnable

	Field/Checkbox	Value
	Room Id	It corresponds to the ' <b>Id'</b> value in the ' <b>Rooms'</b> section of Server settings.
	Display Id	It corresponds to the ' <b>Display Id</b> ' value in the ' <b>Rooms'</b> section of Server settings.
	Server	The Server IP-address within one local network ( <i>see Url of the Rooms tab</i> ).
PRO         Clone mode         Enable Hot Standby feature.		Enable Hot Standby feature.
PRO	Clone Id	Visualizer switch priority under hot standby.
	ShowMouse	A function of mouse cursor display when the Visualizer is running.
	HideTaskbar	It enables the user to hide the desktop task bar when the Visualizer is running.
	ShowBackgroundForm	It allows the user to hide desktop icons and the Windows control panel, as well as to replace the background picture with the black color during Visualizer operation.
	DrawingEnable	A possibility to draw on the display from the Designer.



### Screen capture

To transmit the image, a screen capture mechanism and conversion of this image to jpeg are used.

Screen	Screen capture							
Width	960	Height	540	Quality	80	FPSTimeOut	500	🛛 Aspect

Field/Checkbox	Value
Width	The width of the display facility desktop image to be transmitted to the
	Designer.
Height	The height of the display facility desktop image to be transmitted to the
	Designer.
Quality	The quality of the display facility desktop image to be transmitted to the
	Designer It accepts values of 0 to 100, where 100 is the best quality.
<b>FPSTimeOut</b> A delay until the display facility screen shot is received. We	
	setting values 200 – 1000 (milliseconds).
Aspect	Save proportions.

### Visualizer custom capture

Field/Checkbox	Value				
X and Y	The upper left point coordinates of Visualizer capture frame.				
Width	The width of Visualizer capture frame.				
Height	The height of Visualizer capture frame.				
Enable	Enable/Disable custom VIsualizer area.				

### Plugins

Enabled	Id	Name	Datapath Pixel Format	Keep VLC Settings
PreviewEnabled	1	Camera1	AUTO	GDI Mode
PreviewWidth 500	2	Camera2	AUTO	✓ Overlay
PreviewHeight 500				
reviewTimeOut 500				
InputsPath C:/polywall/inputs				
Datapath DMA Direct				
Datapath DMA Direct Preview				- Web plugin
Video stream configuration (including IP Camera source)				Clean cache
Datapath SQX				Clean cache
O Matrox IPX				
	Add Input		Delete Input	

#### Hardware source plugin

The display plug-in of hardware sources at the controller input (of the display facility). **Datapath** (VisionSC Range, VisionAV Range, ActiveSQX card), **Matrox** (Mura MPX cards, Mura IPX cards, C-series graphic cards) capture cards are supported.

Enabled	Id	Name	Datapath Pixel Format
PreviewEnabled	1	Camera1	AUTO
PreviewWidth 500	2	Camera2	AUTO
PreviewHeight 500			
reviewTimeOut 500			
InputsPath C:/polywall/inputs			
Datapath DMA Direct			
Datapath DMA Direct Preview			
Video stream configuration (including IP Camera source)			
Datapath SQX Matrox IPX			

Field/Checkbox	Value			
Enabled	Enable/disable the plug-in			
PreviewEnabled	Preview of the source image on the desktop screen shot (it is not displayed by default).			
PreviewWidth	Preview image width.			
PreviewHeight	Preview image height.			
PreviewTimeOut	The delay time before the source image is received.			
InputsPath	The folder where the Visualizer creates a source corresponding to the controller input.			
Datapath DMA Direct	Use the <b>Datapath</b> input card.			
	<b>'True'</b> – data transmission directly to the graphic card; <b>'False'</b> – data transmission via the system memory.			
Datapath DMA Direct Preview	Obtain the Preview of the <b>Datapath</b> card.			
	<b>'True'</b> – to obtain Preview directly by the graphic card; <b>'False'</b> – to obtain Preview via the system memory.			
Datapath Capture Format	Support for YUV, RGB 5:5:5, 5:6:5, Grey and 8:8:8.			
Video stream configuration	Enable hardware encoding on Datapth SQX or Matrox IPX capture cards.			

Field	Value			
Id	Number of the controller hardware input.			
Name	The name of the controller hardware input (to be used to create a respective file in the ' <b>Inputspath</b> ' folder).			
Datapath Pixel Format	Change capture format for every capture card input. It can solve bad image quality in some cases.			

#### Video plugin

Plugin settings for video file display.

The VLC player platform is used.

Video plugin				
Keep VLC Settings				
🔲 GDI Mode				
Overlay				

Checkbox	Value			
Keep VLC Settings	Use the player settings set from outside.			
GDI Mode	Display the Windows GDI-interface video. If GDI Mode is not selected, DirectX is used.			
Overlay	Use hardware acceleration when displaying the video.			

### Web plugin

Possibility to clean cache (cookie) for all web sources.

Web plugin				
(	Clean cache			

### Save the Visualizer settings

To save settings, press '**Save'** in the left bottom corner.

After started, the Visualizer will be shown in the tray.

Room Id Hall	Display Id 1	Server http://127.0.0.1:8080	(polywall/
Clone mode Clone Id 1			
ShowMouse	HideTaskbar	ShowBeckgroundForm	CrawingEna
Screen capture Width 960 Height 540	Quality 80 FPSTimeOut 500	Custom display area X 1920 Y 0	Width 1680 Height 1050
Plugins			
Hardware source plugin		d Name Datacath i	Video plugin
PreviewFoahled	5	d Name Datapath i	Pixel Format GDI Mode
PreviewWidth 500		Configuration saved. Please, restart Visualizer to apply it.	Overlay
PreviewHeight 500		Ok	
PreviewTimeOut 500		<u>Un</u>	
InputsPath C:/polywall/inputs			
Datapath DNA Direct			
Datapath DMA Direct Preview			- Web plugin
Video stream configuration (including IP     O None     C Datapath SQK     Matrox IPX	Camera source)		Clean cache
C Page 24			
		Add Input	Delete Input

Warning! After all the Visualizer settings are saved, rerun Visualizer.



## PRO HTTPS SET UP

To configure Polywall secure connection:

1. Check 'Encrypted connection' parameter during the installation of the Worker application.

Server settings:

2. Establish secure connection to the Server (check 'Enabled' parameter in the 'Security' tab in the 'Encrypted connection (https)' section in the Server settings).

3. The 'Url' value in 'Repositories' tab must be set as 'https://...'.

4. The 'Url' and 'Repo Url' value in 'Rooms' tab must be set as 'https://...'.

5. Set up Visualizer secure connection: the 'Server' value must be set as 'https://...'.

After that open *Mozilla Firefox* or *Google Chrome* browser at any PC (linked to local network with Server) and type in URL

'https://<Ip-address\_of\_Server>:8080/polywall/designer'.

Security alert will be displayed.

Press 'I Understand the Risks', then press 'Add Exception...' and 'Confirm Security Exception'.

<b>Y</b>	This Connection is Untrusted         You have asked Firefox to connect securely to 192.168.179.128:8080, but we can't confirm the connection is secure.         Normally, when you try to connect securely, sites will present trusted identification to prove the are going to the right place. However, this site's identity can't be verified.         What Should I Do?         If you usually connect to this site without problems, this error could mean that someone is tryin impersonate the site, and you shouldn't continue.         Get me out of here!	ou	
	Technical Details	A	Add Security Exception
	I Understand the Risks         If you understand what's going on, you can tell Firefox to start trusting this site's identification.         you trust the site, this error could mean that someone is tampering with your connection.         Don't add an exception unless you know there's a good reason why this site doesn't use trusted identification.         Add Exception_	•	You are about to override how Firefox identifies this site.         Legitimate banks, stores, and other public sites will not ask you to do this.         Server         Location:       https://192.168.179.128.8080/polywall/designer         Certificate Status         This site attempts to identify itself with invalid information.         View         Wrong Site         The certificate belongs to a different site, which could mean that someone is trying to
			Impersonate this site.         Unknown Identity         The certificate is not trusted because it hasn't been verified as issued by a trusted authority using a secure signature.         Image: Permanently store this exception         Confirm Security Exception

Warning! Establishment of ensured connection of Worker and Server shall match!

Warning! After changes to Server settings are made, restart the Server.

Warning! After changes to Visualizer settings are made, restart the Visualizer.



To access files when establishing ensured connection in Worker type

'https://<IP-address\_of\_Worker>:8081'.

Security alert will be displayed.

Press 'I Understand the Risks', then press 'Add Exception...' and 'Confirm Security Exception'.

	This Connection is Untrusted		
	ou have asked Firefox to connect securely to <b>192.168.179.128:8080</b> , but we can't confirm that y onnection is secure.	your	
	Normally, when you try to connect securely, sites will present trusted identification to prove that you are going to the right place. However, this site's identity can't be verified.		
v	What Should I Do?		
	you usually connect to this site without problems, this error could mean that someone is trying mpersonate the site, and you shouldn't continue.	to	
	Get me out of here!		
۲ م	Technical Details I Understand the Risks If you understand what's going on, you can tell Firefox to start trusting this site's identification. E you trust the site, this error could mean that someone is tampering with your connection. Don't add an exception unless you know there's a good reason why this site doesn't use trusted identification. Add Exception_	Add See	curity Exception
• I			You are about to override how Firefox identifies this site. Legitimate banks, stores, and other public sites will not ask you to do this.
ye D		Serv	
		This	ificate Status site attempts to identify itself with invalid information. <u>View</u>
			ong Site
			certificate belongs to a different site, which could mean that someone is trying to ersonate this site.
		Unk	nown Identity
			certificate is not trusted because it hasn't been verified as issued by a trusted nority using a secure signature.
			Permanently store this exception

Confirm Security Exception Cancel

## **VIEW THE SETUP RESULT**

To view the Polywall setup result, open *Mozilla Firefox* or *Google Chrome* on any computer (within the shared local network with the Server) and enter the following in the address bar

'http://<Ip-address\_of\_Server>:8080/polywall/designer' .

or

'https://<Ip-address\_of\_Server>:8080/polywall/designer' (for secured connection).

Warning! After changes to Server settings are made, restart the Server.

Warning! After changes to Visualizer settings are made, restart the Visualizer.

## APPENDIXES

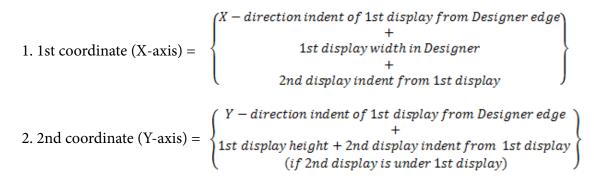
# 1. Calculation of the top left corner coordinates for the display facility in the Designer

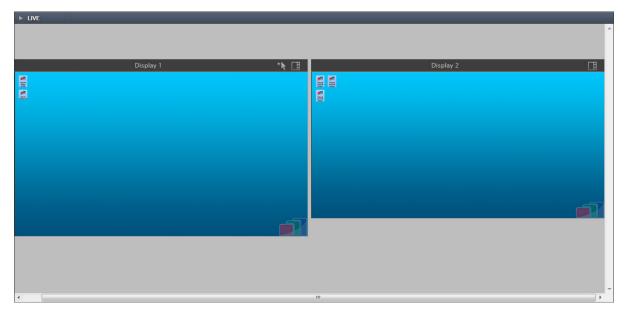
Designer-position allows allocation of several display facilities in a control-friendly form.

#### Designer-position first display:

1. Define X- and Y-direction indent of display from Designer edge. For example, 10x10.

#### 2nd display positioning:





Entered coordinates change scale of display image; however, display name area and file control menu remain unchanged.

## 2. How to play YouTube videos directly

- 1. Open desired video in YouTube.
- 2. Click «Share» under the video.
- 3. Choose «Embed».

4. Copy the link without quotes and other additional symbols, for example, https://www.youtube. com/embed/XvB7hOY9m90

5. Add special parameters for hiding menu, bars and autoplaying to the link: https://www. youtube.com/embed/XvB7hOY9m90?controls=0&showinfo=0&autoplay=1&autohide=1. For example: https://www.youtube.com/embed/XvB7hOY9m90?controls=0&showinfo=0&au toplay=1&autohide=1%20%3Chttps://www.youtube.com/embed/XvB7hOY9m90?controls= 0&showinfo=0&autoplay=1&autohide=1%3E

**6.** Open Polywall Designer, create Web page source, paste the final link and put the source on the video wall.

## 3. Polywall TCP port numbers

8080 - Polywall Server and Polywall Designer (control web interface).

8081 – Polywall Worker.

8086-8087 - Polywall Visualizer.

9998-9999 - Equipment controller (Crestron/AMX).

5900 – Polywall Agent.

### 4. Custom Visualizer capture area setup

**1.** Open Display settings in Polywall Server configurator and set desired capture resolution in size field.

**2.** Open Visualizer configurator and set start point and dimensions of Visualizer capture area. Dimensions are equal to resolution in Server settings.

3. Save and restart Server and Visualizer.