User Guide

VSNMini 300 Wall Controller

Engineering the **world's best** visual solutions

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EXCELLENCE BY DESIGN

CONTENTS

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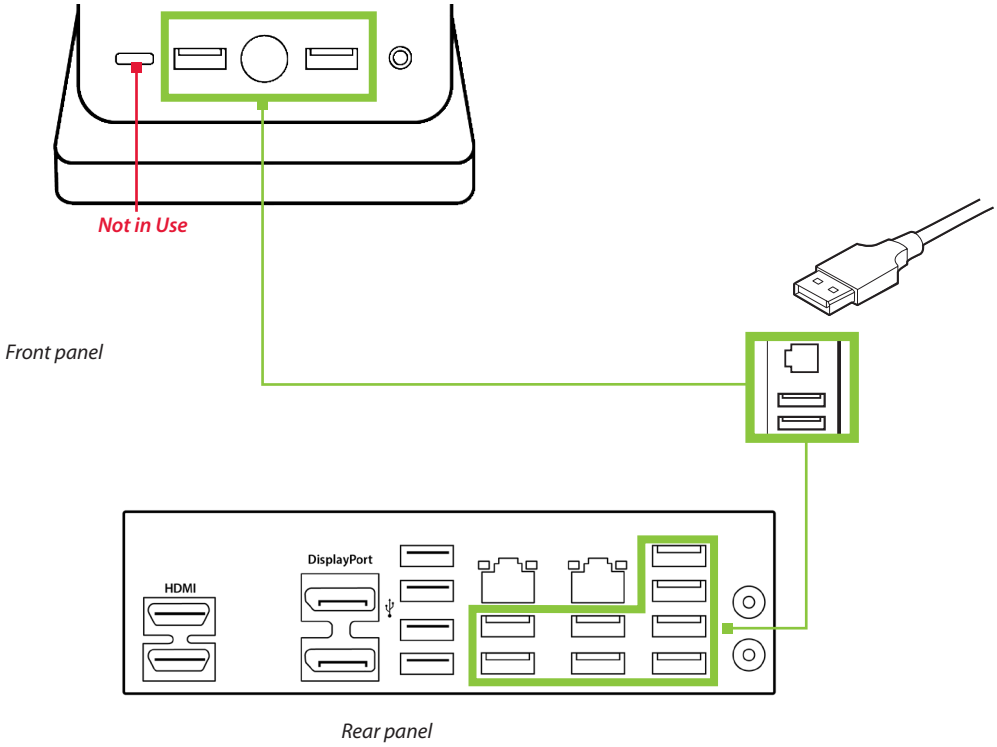
CHAPTER 1 – INITIAL SETUP

1.1 Keyboard and Mouse

Connect Keyboard and Mouse to convenient USB Ports

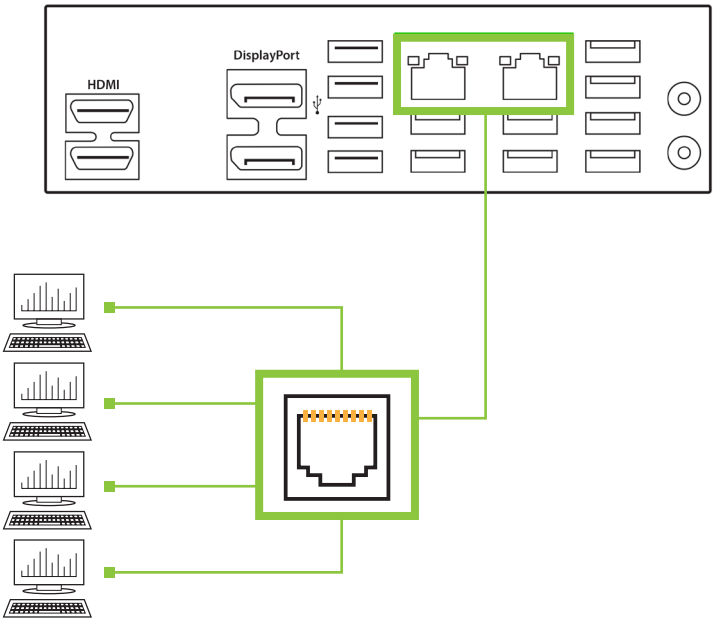
USB Ports are located on both the front and rear panels of the system. It may be more convenient to use the USB ports on the front for easy access

- 7 x external USB ports
- 2 x USB 3.0 on the front panel
- 2 x USB 3.0 on the rear panel
- 2 x USB 2.0 on the rear panel
- 1 x USB C on the rear panel



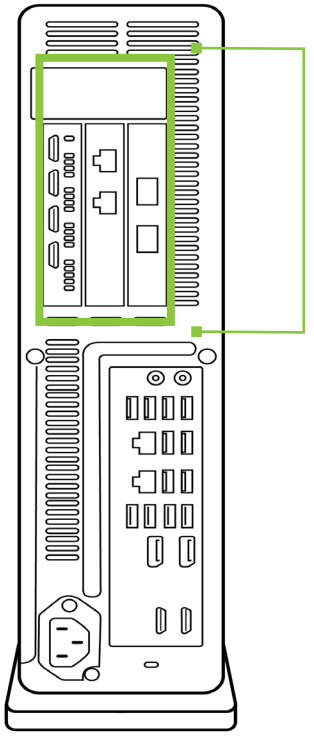
1.2 Connect to a Network (Optional)

If the VSNMini 300 wall controller is to be used over a network, connect the controller to a network point (cables not supplied) using one of the LAN connectors on the rear panel.



1.3 Connecting Video Input Sources

As each VSNMini 300 wall controller is custom built, the number and type of video inputs will differ from system to system. If you have purchased a VSNMini 300 wall controller with video inputs, the input connectors are located on the rear panel as shown in the example below:



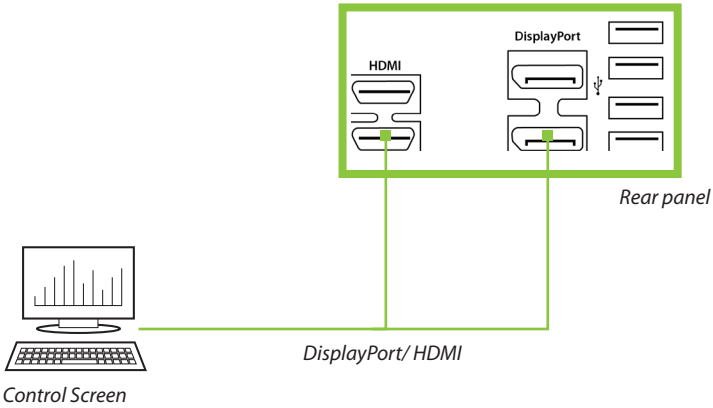
The printed input/output diagram shipped with your VSNMini 300 wall controller shows where the video inputs are located and the types of input connectors installed in your system.

Connect the input sources to the relevant video input connectors, cables may be supplied for some inputs, see content list supplied with the system.

1.4 Connecting a Control Screen

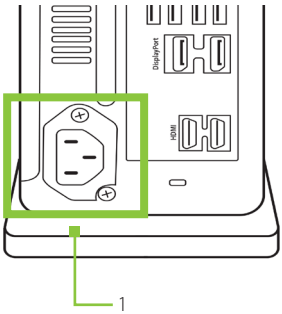
Your VSNMini 300 wall controller is configured to use a control screen connected to the system's internal graphics device prior to leaving the factory. Connect the control screen to the motherboard graphics output connector on the rear of the VSNMini 300 wall controller.

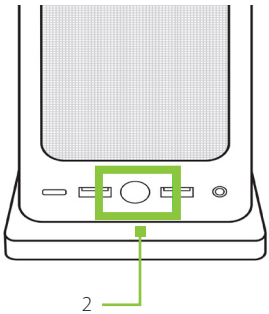
A control screen is initially required to set up the system including the operating system (Windows 10).



1.5 Powering up the System

1	Connect power cables to the rear of VSNMini 300 system then plug into a mains supply.
2	Switch on the system using the power button on the front panel.



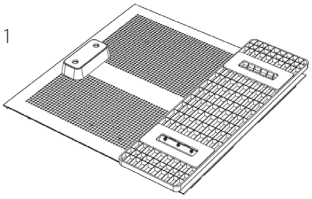


1.6 Configuring the system to a horizontal setup

The VSNMini 300 can be configured to stand in one of two horizontal positions as opposed to the vertical position setup when shipped. The parts required to set up horizontally are shipped with the system.

Horizontal Postion 1

1



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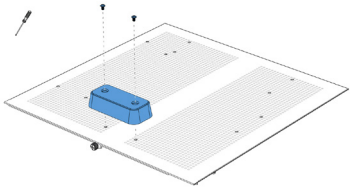
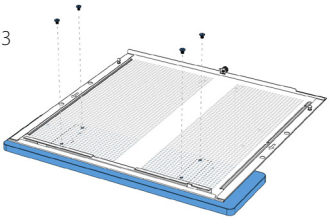


3



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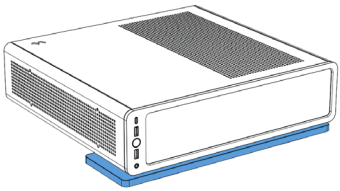
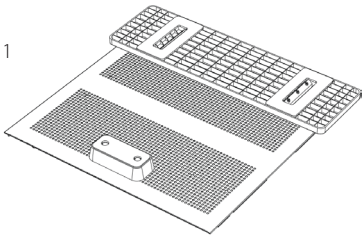
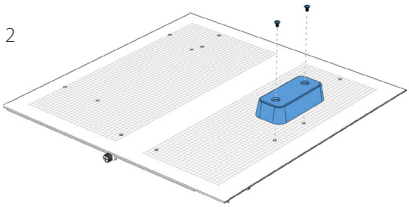


Horizontal Postion 2

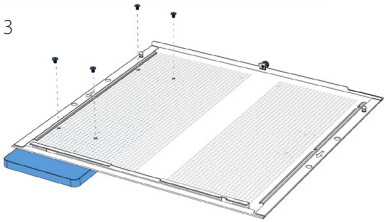
1



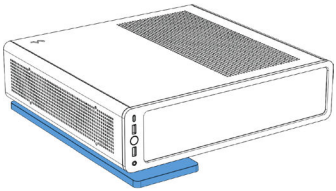
2



3



4



1.7 Windows 10 Setup

Once the system has been built and configured in our factory the operating system is resealed, therefore when switching the system on for the first time, the operating system setup commences. You will be prompted to enter information to set up the Windows 10 operating system.

There is no requirement for users to activate Windows 10 as this is done prior to shipping.

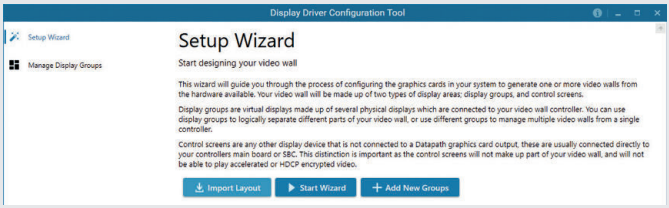
You are strongly recommended to create a "Restore USB Flash Drive" (as detailed later in this guide).

1.8 Display Configuration

Once the operating system setup is complete, the VSNMini 300 wall controller will reboot and the control screen will show a Windows desktop displaying the Display Driver Configuration Tool (DDCT). The DDCT will guide you, step by step, through the configuration of the graphics outputs, enabling you to quickly create one or more video walls.

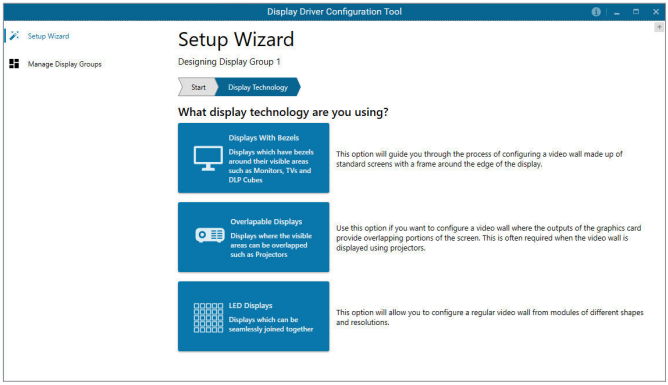
On the final stage of the configuration, the DDCT will recommend the optimum way to connect your VSNMini 300 wall controller to your video wall displays.

It is recommended that you carefully read the instructions on each page of the wizard.
To commence your wall configuration, click on **Start Wizard**.



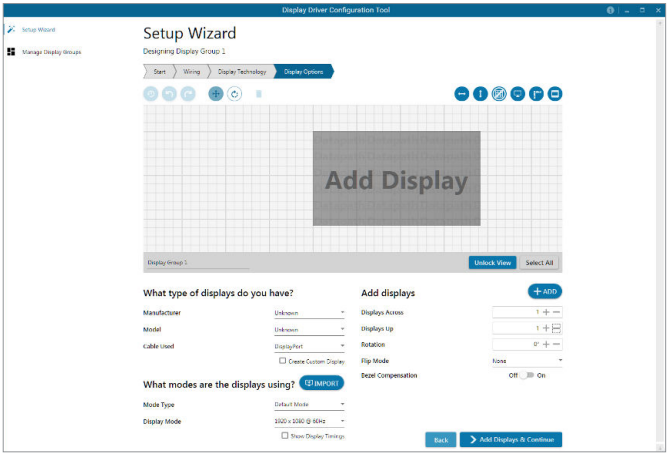
Select the type of displays being used on your wall:

- Displays With Bezels – Monitors, TVs and DLP Cubes.
- Overlapable Displays – Projectors.
- LED Displays.



Click on **Continue**.

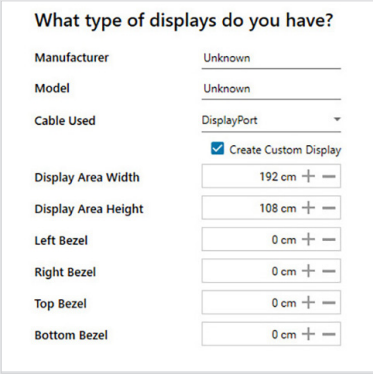
The tool will then display a configuration page for the type of display you selected.



1.9 What type of displays do you have?

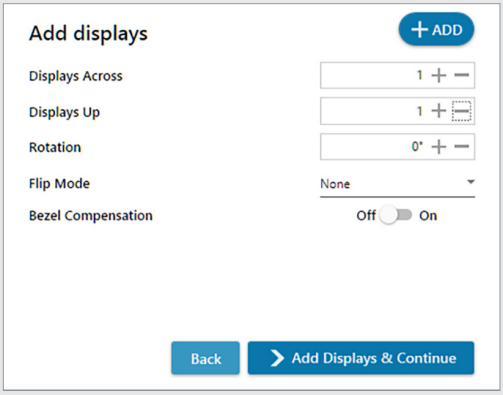
Use the manufacturer and model dropdown lists to select the displays you are using for your wall. If the wall consists of different displays, select each one in turn to configure the type of display. The DDCT has an extensive database of displays, however if your display is not contained in the list, you can input the details manually by selecting Create Custom Display.

It is strongly recommended that measurements are taken from the display manufacturer's specifications if available.

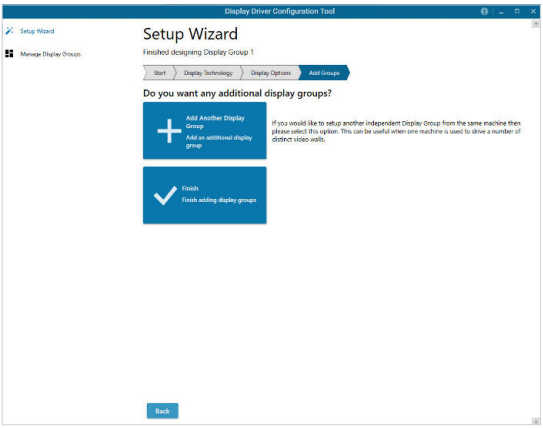


1.10 Add Displays

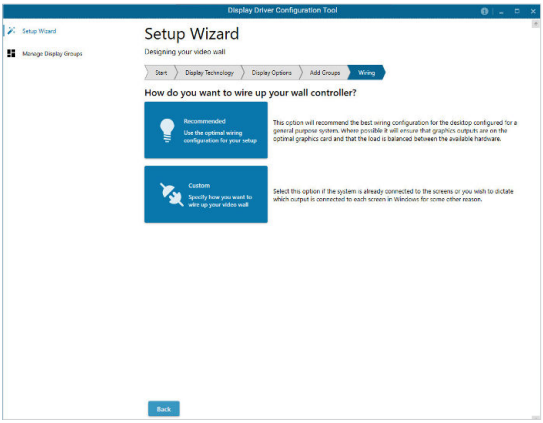
Add Displays is available for displays with bezels or overlapable displays. Use the Displays Across and the Displays Up to create your Display Group. Once created, configure the displays using What Type of Displays Do You Have? When using overlapable displays Display Overlap becomes available, enabling you to select a percentage of overlap between displays.



Once the layout has been created and the type(s) of displays configured, click on **Add Displays & Continue** and the following dialogue is displayed:



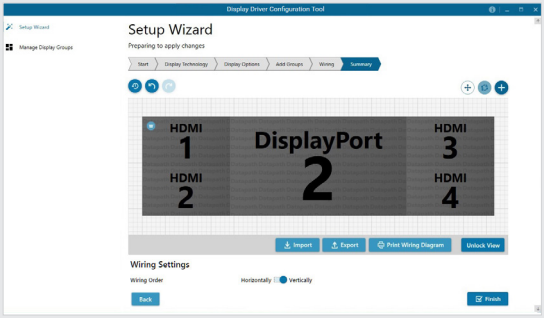
At this stage of the set up you can choose to create another independent display group from the same system, this would be considered if one machine will be used to drive a number of separate video walls. If another display group is not required, click on **Finish** and the following page is displayed:



The DDCT can recommend the best wiring configuration for your system, ensuring the load is balanced between the graphics hardware. Click on **Recommended** for the optimal configuration for your system.

(Should you wish to manually wire your system and decide for yourself which output is connected to which display, click on **Custom**).

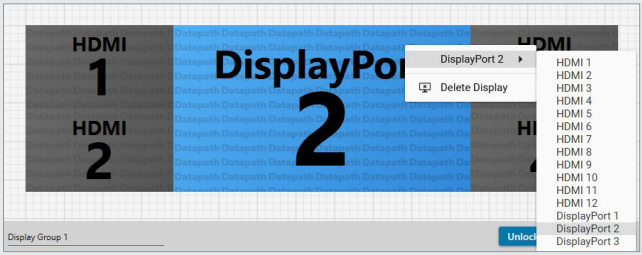
You will be next be presented with the Summary page:



If you chose to have the DDCT configure your wiring, this page will display the recommended display connections, as shown. Connect each display to the corresponding output connector on the rear of the VSNMini 300 wall controller. The printed input/output diagram shipped with your VSNMini 300 wall controller shows where the display connectors are located on your system. If your VSNMini 300 wall controller is connected to a printer, you can print a copy of the wiring diagram using the Print a Wiring Diagram function.

Note: The Datapath Diagnostic Suite must be installed to print a wiring diagram. The suite can be downloaded from the Datapath website downloads page should it not already be installed on your system.

To manually select the outputs right click on the display group and select **Edit**, you can then select each individual display and allocate your preferred output. Right click on a selected display to reveal the list of outputs available:



When all outputs have been allocated by either Recommended or Custom click on **Finish**. You will then be prompted to save the changes to your video wall and restart your system. When restarted, the Windows Desktop will be displayed across the wall.

You can access the configuration tool at any time should you wish to make changes.
Right click on the desktop and select **Display Driver Configuration Tool** from the menu.

1.11 WallControl 10 (Optional)

Before opening the WallControl 10 Client interface you may need to start the WallControl 10 Server should it not start automatically. The Server icon is displayed in the System Tray.

Server icon

If the Server fails to start automatically, start the Server by clicking on it in the "All Programs" menu. The WallControl 10 Client will only detect servers that are running.

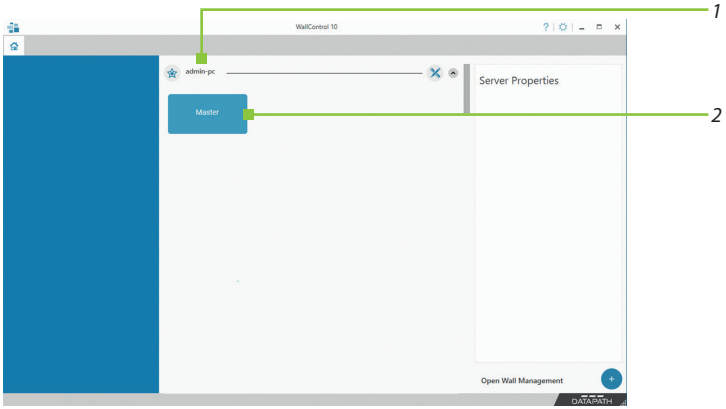
Open the WallControl 10 Client

Start | All Programs | WallControl 10 - Server

1.12 Open the WallControl 10 Client

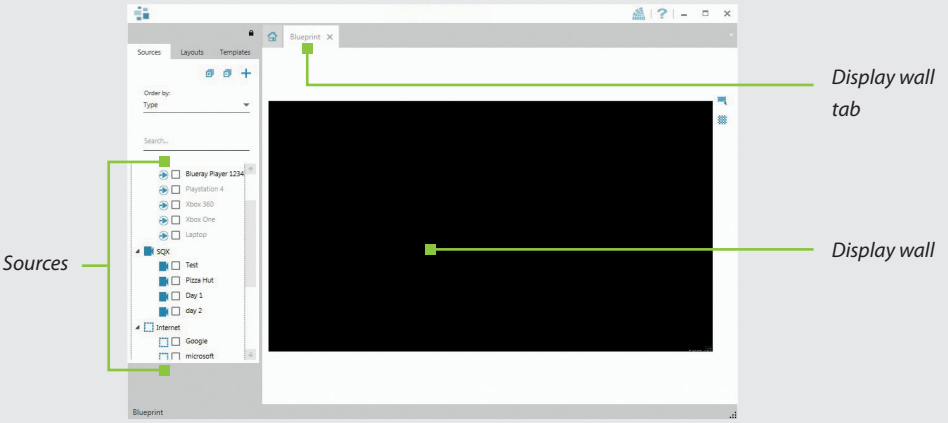
Start | All Programs | WallControl 10 - Client

1.13 The WallControl 10 - Client



1	Indicates the server you are connected to.
2	A representation of the display wall associated with the server.

Click on the display wall representation as shown above, to open the display wall tab.



When opened, the display wall tab shows a live representation of the physical wall and the sources available to display on it. To place a source on the video wall, simply click on the required source in the sources tab and drag it onto the display wall representation.
(Note: It is not possible to drag Application sources, double click to open).

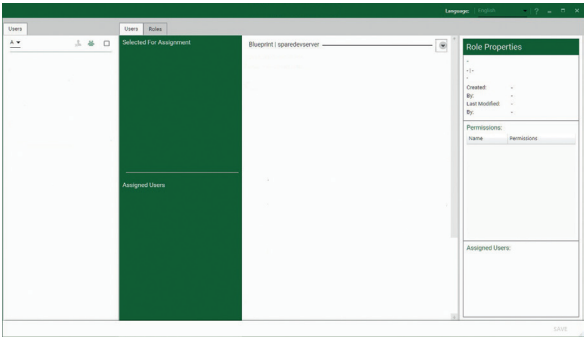
The application help file contains information explaining how multiple sources can be selected, how to use and create templates and how to save, recall and share layout files.

1.14 The WallControl 10 - Security Administration Client (Only Available with WallControl 10 Pro)

A WallControl 10-Pro serial dongle must be inserted into a vacant USB port. If the dongle is removed or swapped, the Security Client will not open and an error message is displayed, therefore it is important the dongle is not removed.

If you have purchased WallControl 10 Pro, the licence dongle can be located in the accessories box.

Start | All Programs | WallControl 10 - Security Administration Client



The WallControl 10 - Security Administration Client allows Administrators to assign specific users to roles on a wall by wall basis. For example, a user can be assigned a role allowing unrestricted access on one wall but assigned a role on another wall which only allows the opening of pre-determined layouts.

Prior to the Security Client being used for the first time, the SecurityOnOff.exe program must be running to enable security protection for the application. To manually run the SecurityOnOff.exe, ensure you are logged into Windows with Administrator Rights.

Locate and double click on the SecurityOnOff.exe file:

Program Files|WallControl 10| Security Server|SecurityOnOff

- Import users from the Windows Active Directory into the database.
- Create and edit roles.
- Assign permissions to providers, layouts and sources giving specific roles access to them.
- Assign roles to walls.

1.15 Create a Restore USB Flash Drive

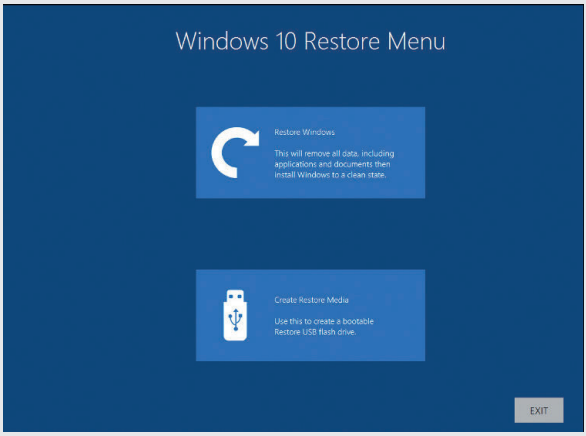
To create your Restore USB Flash Drive you will need a USB memory stick with a minimum capacity of 32GB. It is recommended that once your restore flash drive has been created, it is stored in a safe place accessible to personnel who may be required to restore the system.

You will need to boot into the Windows Restore portal to begin the process of creating your Restore USB Flash Drive.

Switch on your machine and when the boot messages display the **Choose an operating system** screen, use the cursor keys to select **Windows Restore**.

It should be noted that the dialogue is only displayed briefly, approximately 3 seconds.

This will lead you to the Windows Restore Menu as shown below:



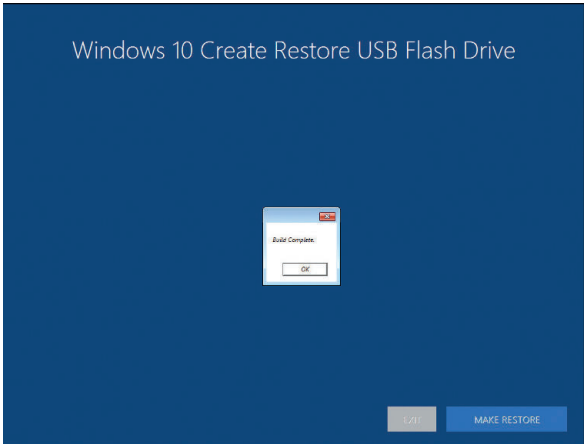
Click on the Create Restore Media icon then insert the USB flash drive into a vacant USB slot (min capacity 32GB).

It should be noted that any data currently stored on the USB Flash Drive will be deleted permanently during this process.

Click on **SCAN FOR USB**.

The application will now scan the system USB ports to detect your USB flash drive. Once the flash drive has been discovered, it will appear in the **Select Drive** dropdown list. Select the flash drive you wish to use from the list and click on **MAKE RESTORE**.

Once the Windows 10 Restore USB Flash Drive has been created a **Build Complete** dialogue is displayed:



Click on **"OK"** to complete the process.

CHAPTER 2 – INTRODUCTION

2.1 Introduction

TheVSNMini 300 wall controller has been manufactured and tested to the highest standards offering unparalleled quality and reliability. The aim of this user guide is to assist you through the installation of the system safely and effectively and act as a reference guide for future use. Do not switch on the system until all the relevant cables have been connected.

2.2 System

The systems covered by this user guide is the range ofVSNMini 300 video wall controllers.

2.3 How the User Guide is Organized

The user guide is broken down into chapters and each chapter into sections. Chapters, sections, and pages are numbered individually. Pages are numbered in Arabic numerals with the exception of the cover page (no numbering).

2.4 Fonts and Symbols

2.4.1 Fonts

The font used throughout the user guide is Myriad Pro however the following font styles mean:

Bold	Used to describe menu titles, buttons in software or elements that you must type exactly as shown in the Command Line Interface
Ellipsis (...)	Parameter that can be repeated several times in a command line.
Between brackets ([])	Optional items.
Between braces ({})	Set of choices (separated by |) from which you must choose only one.
Italic	*NEED TO SPECIFY: (e.g. "Text used to emphasize a point", "example text")*
` ç ì ê á É ê	Indicates code or program output.
Blue Underlined	Indicates a hyper-link. Some hyper-links may be linked to live websites.

2.4.2 Symbols

Symbols are used throughout this user guide to assist the user in quickly identifying important safety information and notes.

Yellow triangle indicates that failure to observe the instructions could result in injury and/or damage to the system.

Lifting precautions should be considered.

White arrow in a blue box indicates a useful tip.

White exclamation mark in a blue box indicates important information.

2.5 Terminology and Definitions

2.5.1 Command Line Interface

Preferred means by advanced users of issuing commands and controlling an application or operating system. Programs with a Command Line Interface are generally considered easier to automate via scripting.

2.5.2 Control Screen

All systems are shipped with the BIOS configured to boot the system off the onboard graphics device. This output can then be used as the Control Screen for a typical video wall. The content of the control screen is not displayed on the video wall desktop and can be used to host the Wall Control application window.

2.5.3 SDK

Software Development Kit: A set of software development tools which allows the creation of certain applications.

2.5.4 WallControl 10 (Optional)

An optional software application for controlling and managing Vision, IP-Camera and third-party application windows on a Datapath Wall Controller. Providing a graphical representation of the video wall and a toolbar through which to manipulate all available input sources and applications.

2.5.5 WallControl 10 Security Administration Client (Optional)

The WallControl 10 Security Administration Client allows Administrators to assign specific users to roles on a wall-by-wall basis. The Security Administration Client is only available with WallControl 10-Pro.

2.5.6 Wall Monitor

A software application that enables the user to monitor the temperatures and voltages of system components.

2.5.7 SQX

SQX is Datapath's collective name for its video streaming and compression technologies.

CHAPTER 3 – SAFETY

3.1 Safety Precautions

To prevent damage to your Datapath product or injury to personnel operating the equipment, please read the following safety precautions prior to operation. These instructions should be made available to all those who will use and operate Datapath products.

3.1.1 Power Supply

All Datapath products require a mains power supply. This power supply must be disconnected when equipment is being relocated.

3.1.2 Cables

Do not expose cables to any liquids; doing so may cause a short circuit which could damage the equipment.

Do not place heavy objects on top of any cables as this can cause damage and possibly lead to exposed live wires.

3.1.3 Ventilation

All computer equipment should be located in a well-ventilated area. All ventilation holes on the computer casing must be kept clear of any obstruction at all times. Failure to do so will result in the system over heating and damaging your equipment.

3.1.4 Working Environment

The equipment should be located in an environment free from dust, moisture and extreme changes in temperature and should be placed on a stable and solid work surface. Liquids (hot/cold drinks etc.) should not be placed near the equipment as spillage could cause serious damage.

3.1.5 Gas/Flammable Liquids

Electronic equipment should never be used in the presence of gas or any flammable liquid, doing so could result in an explosion or serious fire.

3.1.6 Smoke/Unusual Smells

Should you notice smoke or unusual smells being emitted from your system, turn off and unplug the system from the mains supply. The system should then be passed to a qualified technician for inspection. Continued operation could result in personal injury and damage to property.

3.1.7 Maintenance

Apart from what is detailed in this user guide, maintenance should only be carried out by competent technicians, any Datapath plug-in cards that are physically damaged should be returned to Datapath for repair using Datapath RMA procedures.

3.1.8 Replaceable Batteries

Caution: Risk of explosion if batteries are replaced by an incorrect type. Dispose of used batteries according to the local laws/ regulations and manufacturer's instructions.

3.2 Unpacking and Initial Inspection

3.2.1 Unpacking

The system is heavy; lifting precautions should be considered.

To unpack the system, follow the instructions provided on the outside of the packaging. All packaging materials should be retained for future transit.

3.2.2 Initial Inspection

All systems are carefully prepared for shipment and every effort is made to ensure you receive the product in pristine condition. On receipt, you should carefully inspect the outer packaging for any transit damage i.e., any signs that the system may have been dropped etc.

Use the packing list enclosed to establish that all the items are present. Should any items from the packing list be missing, contact Datapath for further instructions.

Check the chassis for damage that could have an adverse effect on the operation of the system or could cause injury to the operator. Should there be any physical damage to the power supply unit, for example damaged power sockets or exposed wiring do not connect to a power source, contact Datapath for further instructions.

CHAPTER 4 – GENERAL

4.1 Overview

The VSNMini 300 provides a modern, compact solution for powering multi-output video walls for meeting rooms, retail environments, and small-scale control room installations. With three PCIe slots, the VSNMini 300 can be reconfigured with Datapath Image graphics, Vision capture, and SQX IP decode cards for your specific project requirements.

The VSNMini 300 is also designed to drive operator workstations in mission-critical Aetria environments. With three PCIe slots, the VSNMini 300 can be configured to capture large volumes of data, from baseband video (HDMI, DisplayPort) to IP streams, web pages, and remote desktops. This data can then be displayed across up to four 4K screens at the operator workstation for local monitoring and control.

Each system has been designed for use in demanding control room environments. Each component has been subjected to rigorous testing to ensure the highest levels of performance and reliability.

In summary:

- High performance and reliability in demanding conditions
- Suited for 24/7 applications
- Can be operated via a network
- Wall Control software (optional) – Display video on the desktop in real time using an array of features
- Wall Monitor software (optional) – Provides monitoring of the temperature and voltage sensors on system components

4.2 Associated Output/Input Cards and Related Products

The following table lists the range of Datapath products associated with the VSN range of video wall controllers. For older card support information please contact Datapath for details:.

Product	Description
Image 2K/4K	Quad output DisplayPort graphics card.
Active SQX2	Scalable IP Encode and decode card.
VisionSC-UHD2	Tow independent HDMI 2.0 capture channels with HDCP 2.2 support.
VisionSC-DP2	Dual channel, 4k UHD DisplayPort capture card.
VisionSC-SDI4	Four channel 3G-SDI video capture card.
VisionSC-HD4+	Quad HDMI video capture card.

We are constantly updating our product portfolio, for the latest details on our full product range please visit our website: **www.datapath.co.uk.**

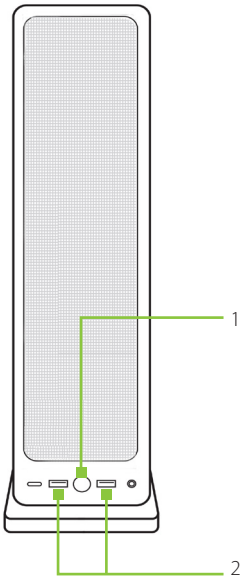
4.3 Product Datasheets

Product datasheets are available to download from **www.datapath.co.uk.**

CHAPTER 5 – HARDWARE

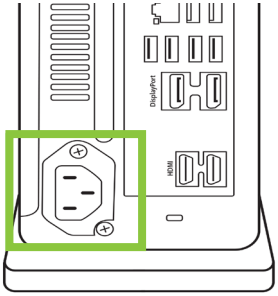
5.1 VSNMini 300

5.1.1 Front



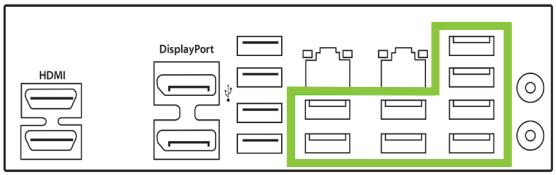
1	Power, on-off
2	USB Ports

5.1.2 Rear



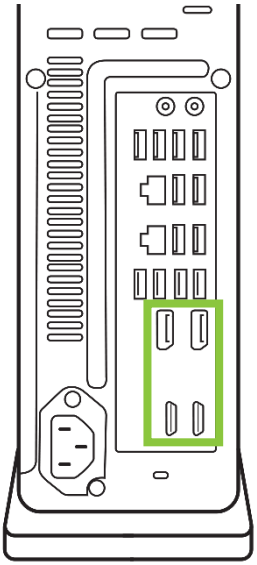
R1

R1	Power connector

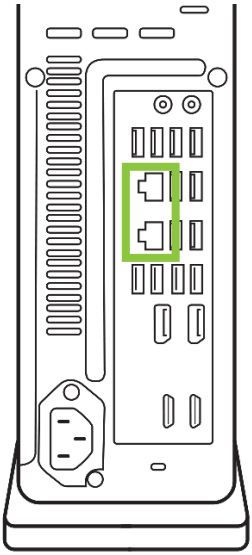


R2

R2	USB Ports



R3	Display outputs



R4	Ethernet ports

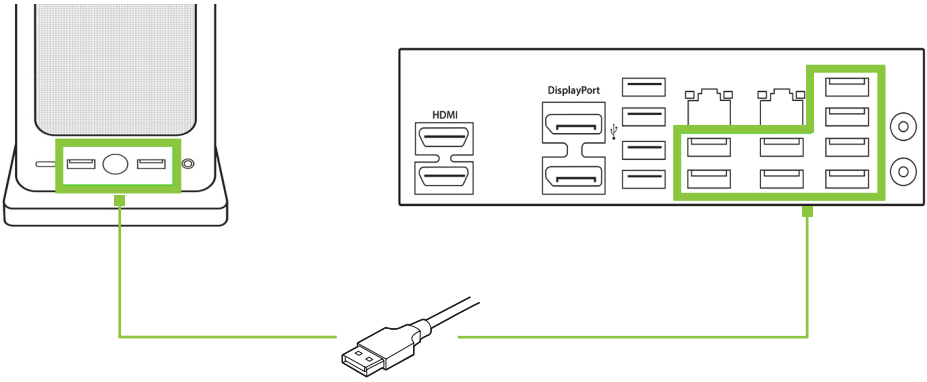
CHAPTER 6 – CABLING

This Chapter will cover:

- Connecting keyboard and mouse
- Connecting to a network
- Connecting input sources
- Connecting a control screen
- Connecting monitors
- Connecting power cables

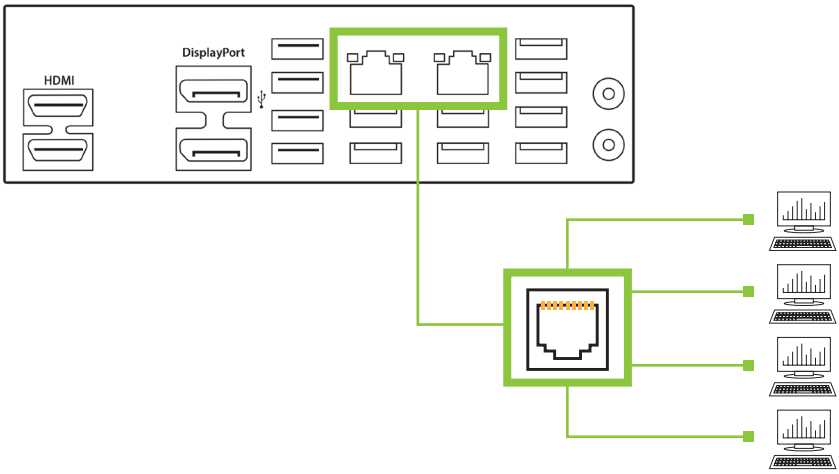
6.1 Connecting the Keyboard and Mouse

The keyboard and mouse supplied with your system both have a USB interface. Identify vacant USB ports on the front or rear panel of the chassis and plug them in.



6.2 Connecting to a Network

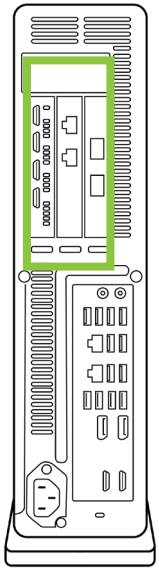
The optional Wall Control software enables the user to operate and manage the video wall display remotely via a network. The VSNMini 300 system has 2 eithernet ports, plug in your network cable (not supplied) to a LAN port and connect the wall controller to the LAN, as shown:



6.2.1 Network Security

It should be noted that network ports have a potential vulnerability. If your system is working in a secure environment, you probably don't need to worry about unauthorised access to the LAN port. If your system is on a network that is generally accessible, you will probably want to restrict access to the ports. The Wall Control software application enables you to configure access to the ports using a network access dialogue – see the Wall Control help file (located on the Recovery Media) for more detailed information.

6.3 Connecting Input Sources



As each VSN wall controller is custom built, the number and type of video inputs will vary from system to system. If you have purchased a VSNMini 300 with video inputs, the input connectors are located on the rear panel as shown in the example below.

The printed input/output diagram shipped with your VSN wall controller shows where the video inputs are located and the types of input connectors installed in your system.

Connect the input sources to the relevant video input connectors. Cables may be supplied for some inputs – see the system content list for details.

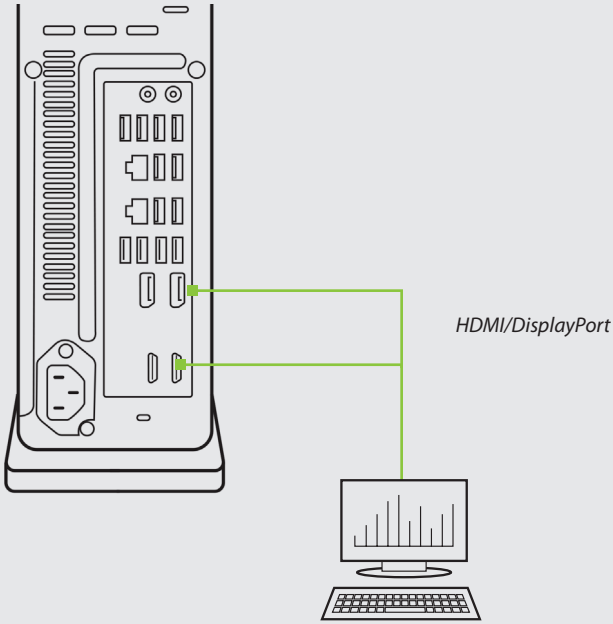
6.3.1 Cable Handling

Great care must be taken when connecting cables. Ensure the cable connectors are the correct type for the connector on the cards. Push the cable connector on squarely; there is no requirement to force the connector in place. Poor cable handling could result in damaged pins in the cable connector. This in turn, could cause serious and irreversible damage to the printed circuit board. Any damage caused this way is not covered under the warranty.

6.4 Connecting a Control Screen

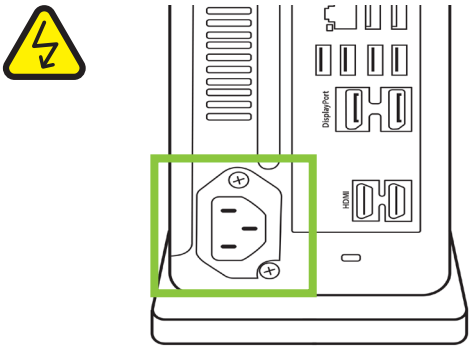
Datapath VSNMini 300 systems are configured to boot off the onboard graphics device therefore there is a requirement to connect a control screen. The control screen is a standalone monitor which is separate from the monitors on the display wall. The control screen is configured as a secondary monitor in the Windows® Display Settings and the display wall is configured as the primary monitor. A control screen is initially required to set up your VSNMini 300 system including the operating system (Windows) and the Display Driver Configuration Tool.

Connect the control screen as follows using the DisplayPort or HDMI connectors on the rear panel:



6.5 Connecting Power Cables

Cables must be connected prior to turning on the power. Ensure cable(s) are fully inserted into the power supply connector on the rear of the VSNMini 300.



Ensure cable(s) are fully inserted into the power supply sockets on the rear of the VSNMini 300 wall controller. Use the cable locking strap(s) to firmly secure the connectors. Failure to do so could result in the cable becoming dislodged and the system inadvertently shutting down.

CHAPTER 7 – OPERATION

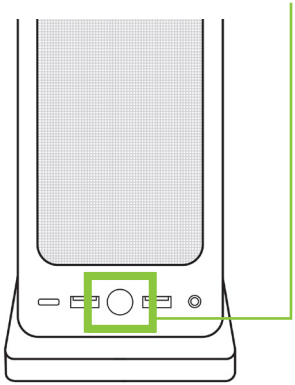
This Chapter will cover:

- Switching on.
- Initial system boot on delivery.
- Setting up the operating system.
- Configuring the video wall displays.
- Opening Wall Control.
- Displaying video captures.

7.1 Switching on

7.1.1 Switching on the Main System

The VSNMini 300 is supplied with a built in power supply unit – ensure the system is plugged into a mains power supply then turn on the system power switch located on the front of the VSNMini 300.



The BIOS and boot messages will be displayed on the control screen as the system boots. Once the system boot up is complete, the display wall will open up into a Windows® desktop.

7.2 Initial System Boot on Delivery

Once the system has been configured in the factory, the operating system is resealed, meaning that when switching on the system for the first time, the operating system setup commences.

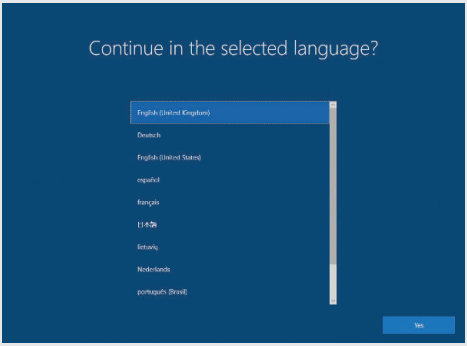
You will be prompted to enter information to set up the operating system on your controller, starting with the 'selecting the language pack' option.

7.2.1 Select Language Pack

Language selection is the responsibility of the customer and is not part of the system pre-configuration prior to shipment. Windows language settings can be changed using **Control Panel/Language**. Language packs are available to download as optional updates.

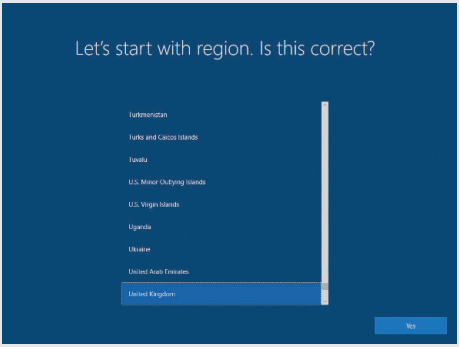
The following languages are pre-installed:

- Simplified Chinese
- Dutch
- French
- German
- Italian
- Japanese
- Portuguese (Brazilian)
- Spanish
- English (UK)
- English (US)
- Polish
- Russian
- Korean



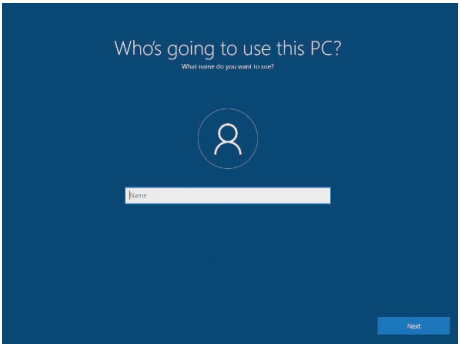
7.2.2 Select Country and Region

Use the scroll bar to select the region, the time zone and currency and the keyboard layout. These localised settings can be changed if required using the dialogue in Control Panel/ Region and Language. You will then be required to accept the Windows Licence Agreement before moving on to create an account.



7.2.3 Names and Password

Next, you will be prompted to create an account for your computer by entering a username, a computer name and a password.



It is recommended that only Internet-standard characters are used in the computer name.
The standard characters are the numbers 0 through to 9, upper and lower-case letters from
A through to Z and the hyphen character. Computer names cannot consist entirely of numbers, contain spaces or use special characters such as: < > ; : " ?* + = \ | ? ,.

You will then be prompted to create a password and three security questions; the security questions are compulsory once a password has been created.

Your Windows system does not require a product key to activate the operating system.

7.2.4 System Backup

It is strongly recommended that some form of system recovery media is created once your system is up and running. This will enable you to restore your Windows Operating System should serious problems occur. See Chapter 13 for details on how to create your own
Windows restore media.

7.3 Display Driver Configuration Tool (DDCT)

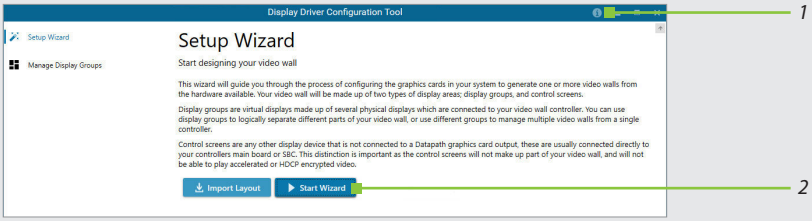
The DDCT is a configuration tool designed to guide you through the design and creation of your video wall using a VSN system. The DDCT will guide you, step by step, through the configuration of the graphics outputs, enabling you to quickly create one or more video walls.

On the final stage of the configuration, the DDCT will recommend the optimum way to connect your VSN wall controller to your video wall displays. Once the Windows Operating System has been configured and rebooted, the DDCT Setup Wizard is displayed on your control screen.

It is recommended that you read the information on each page carefully.

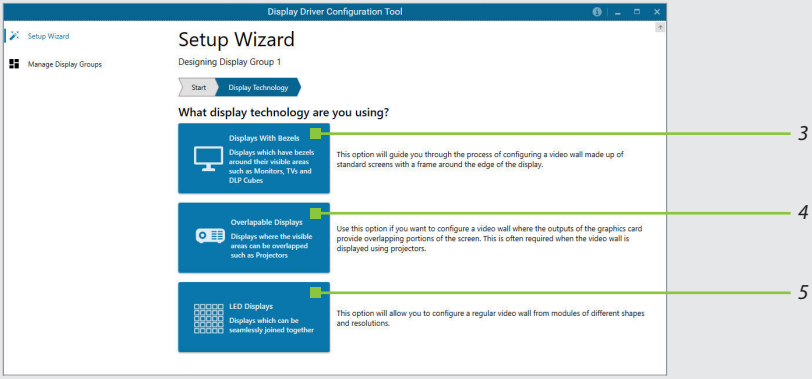
1	Click on the "Information Icon" to open a sliding window which gives version details and copyright information. The latest version of the DDCT is available to download from the Datapath website.
2	To commence your wall configuration, click on "Start Wizard". "Import Layout" is covered later.

7.3.1 Display Technology



Select the type of displays being used on your wall:

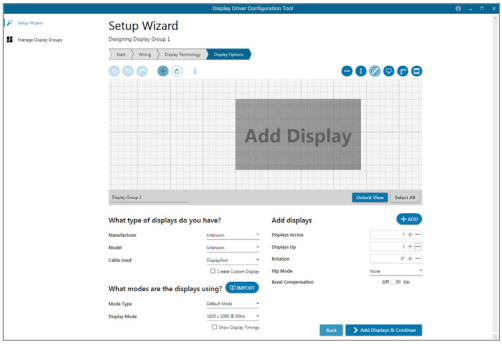
3	Displays With Bezels – Monitors, TV's and DLP Cubes.
4	Overlapable Displays – Projectors.
5	LED Displays.



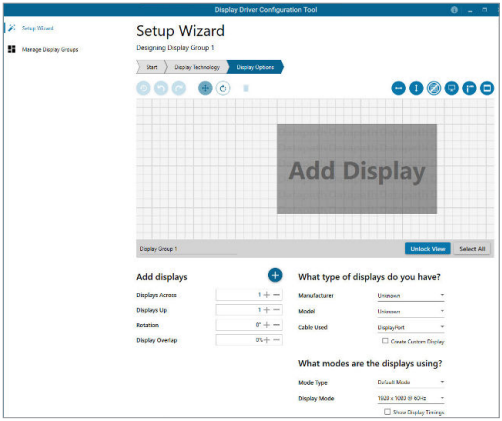
Click on "Continue".

The tool will then display a configuration page for the type of display you selected:

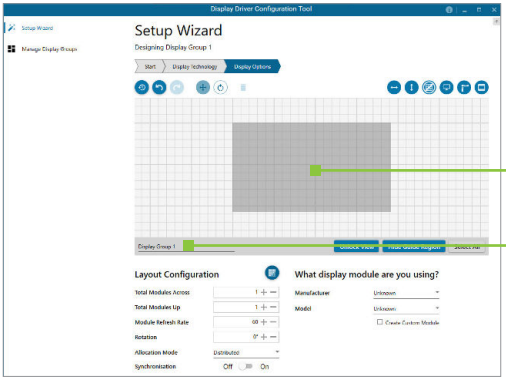
7.3.2 Displays with Bezels



7.3.3 Overlapable Displays



7.3.4 LED Displays



6	Representation
7	Wall Naming

7.3.5 Application Tools

The application tools enable the user to manipulate the design of the wall.
The table below describes the tool functionalities:

	**Undo All** – Undo all commands made on this page.
	**Undo** – Undo the last command.
	**Redo** – Redo the last command.
	**Move displays** – When selected, move the displays by clicking on and dragging the displays around the representation.
	**Rotate displays** – When selected click on a display and drag the cursor up or down, left or right to rotate the display. The display can be rotated 90, 180 or 270 degrees.
	**Delete displays/Display Groups** – Select the displays you wish to remove from the layout then click on the delete button to delete all those selected.
	**Enable X Axis** – Enables the display to be moved from left to right, and right to left.
	**Enable Y Axis** – Enables the display to be moved up and down.
	**Snap to Grid** – When selected, if a display is dragged and released it will snap and position itself to the nearest grid line.
	**Snap to displays** – When selected, if a display is dragged close to another display and released, it will snap and position itself to the display.
	**Snap to Guides** – When selected, if the display is dragged and released near to the axis of another display it will position itself on the same axis.
	**Show Display Bezels** – Select to show or hide the bezels on all the displays in the representation.
	**Configure Outputs** – Available in the Manage Display Group dialogue. Select an output and configure its properties.
	**Add Button** – Used to add displays to your group or to create a new group.
	**Layout Configuration** – Used to add LED modules to your group or to create a new group..
	**Edit** – Used to edit a selected Display Group.
	**Primary Display** – Indicates which display within the display group is the primary display/boot screen. If more than one group is available, the Primary Display can be assigned to either group.

Representation

The representation grid **(6) see para 7.3.4** displays the physical arrangement of the wall as it is being created. Displays can be arranged as required by clicking and dragging them to their required positions using the application tools.

Wall Naming

Click on the edit box **(7) see para 7.3.4** to allocate a name to your wall (optional but recommended). This will be used if you choose to export your layout in the future.

Unlock View

When unlocked, the wall representation can be dragged to a preferred position using the mouse. Use the mouse wheel to zoom in and out of the representation.

Select All

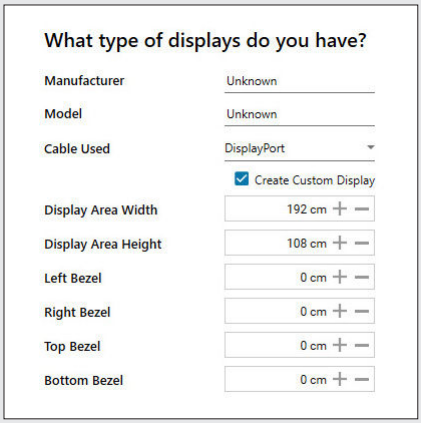
Choosing "Select All" enables the user to select all the displays on the representation to apply common attributes to all displays.

7.3.6 What Type of Displays Do You Have?

Displays with Bezels and Overlapable Displays

The first step to creating your wall is to select the type of displays you have. Use the "Manufacturer" and "Model" dropdown lists to select each display you are using on your wall. The DDCT has an extensive database of displays, however if your display is not contained in the list, you can input its details manually by selecting "Create Custom Display".

It is strongly recommended that measurements are taken from the display manufacturers specifications if available.



Cables Used

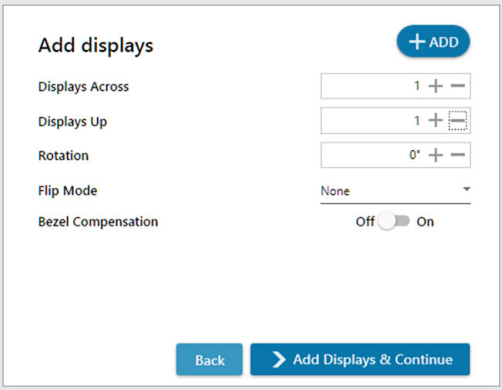
Select the cable types for each monitor. An error message will be displayed if the cable limits are exceeded.

7.3.7 What Modes are the Displays Using?

Use the drop-down lists to select the "Mode Type" and "Display Mode" for your selected display. Select "Show Display Timings" if you wish to view the display timings.

7.3.8 Add Displays

Add Displays is available for displays with bezels or overlapable displays. It enables you to configure the layout of your wall or display group. Use the "Displays Across" and the "Displays Up" to create a plan of your layout. Once your layout has been created you can then configure the displays using "What Type of Displays Do You Have?" When using overlapable displays, "Display Overlap" becomes available enabling you to select a percentage of overlap between displays.



7.3.9 Layout Configuration

Layout Configuration is available if LED display technology has been selected.

The layout configuration setting enables you configure the layout of your wall or display group. Use the "Total Modules Across" and the "Total Modules Up" to create a plan of your layout. Once your layout has been created then you can configure the modules using "What display module are you using".

Allocation Mode

The "Allocation Mode" enables you to select how the distribution of the modules is configured.

Distributed

Creates an even distribution of the modules from all the system outputs. (Recommended).

Unbalanced

Creates an uneven distribution of modules by allocating as many pixels to the first modules as possible. This creates an unbalanced load on the system outputs.

Synchronisation

Synchronises all the outputs in the system.

It is recommended that the synchronisation is set to "On". Turning "Off" the synchronisation can cause tearing when a video source is displayed however it does allow display timings to be edited manually.

7.3.10 What display module are you using?

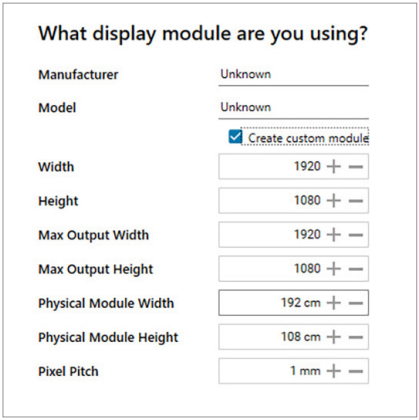
The first step to creating your wall is to select the type of LED modules you have. Use the "Manufacturer" and "Model" dropdown lists to select the LED module you are using on your wall. The DDCT has an extensive database of modules, however if yours is not contained in the list, you can input its details manually by selecting "Create Custom Module".

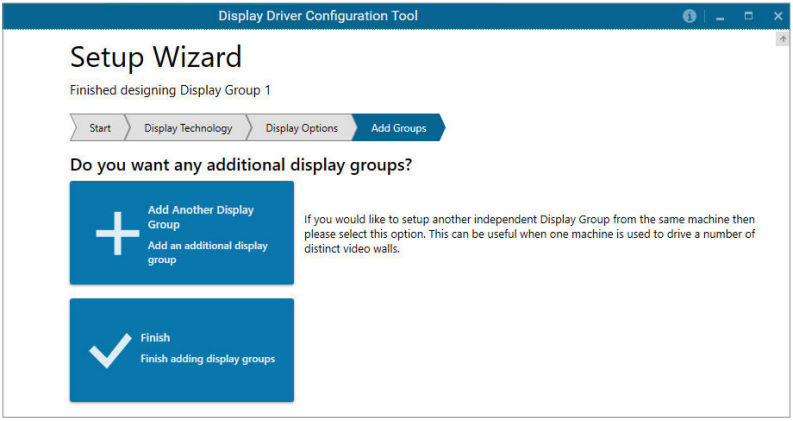
It is strongly recommended that measurements are taken from the display manufacturers specifications if available.

Once a layout has been designed and the type of displays have been selected, you can add the displays to the representation by clicking on the "Add Displays" icon or "Layout Configurations" if LED modules are being used.

When displayed on the "Representation Grid", each display can be configured separately by clicking on it. Use the tools to position your displays creating the desired layout. To deselect the display, click on it again.

When the display wall or display group has been finalised, click on "Continue" and the following page is displayed:



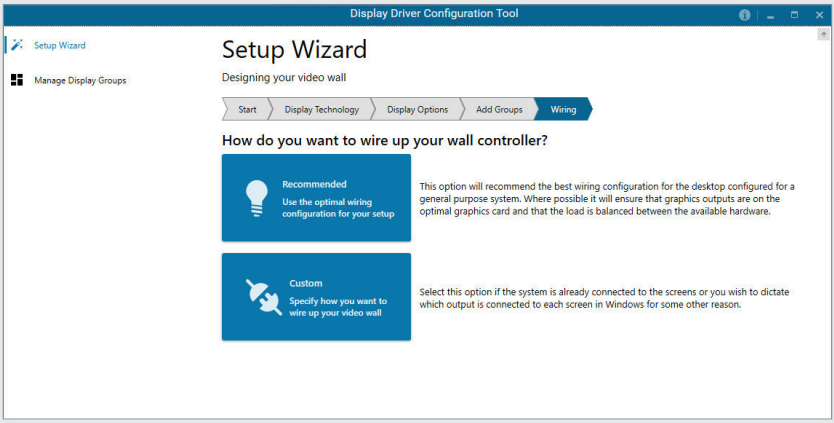


At this stage of the set up, you can choose to create another independent display group from the same system, this would be considered if one machine will be used to drive a number of separate video walls.

7.3.11 Add Groups

Click on the "Add Another Display Group" should you wish to add another group of displays, this will return you to the "Display Technology" page. It should be noted that when creating new display groups that there is no restriction to the type of display technology you can use for each group you create.

If another display group is not required, click on "Finish" and the following page is displayed.

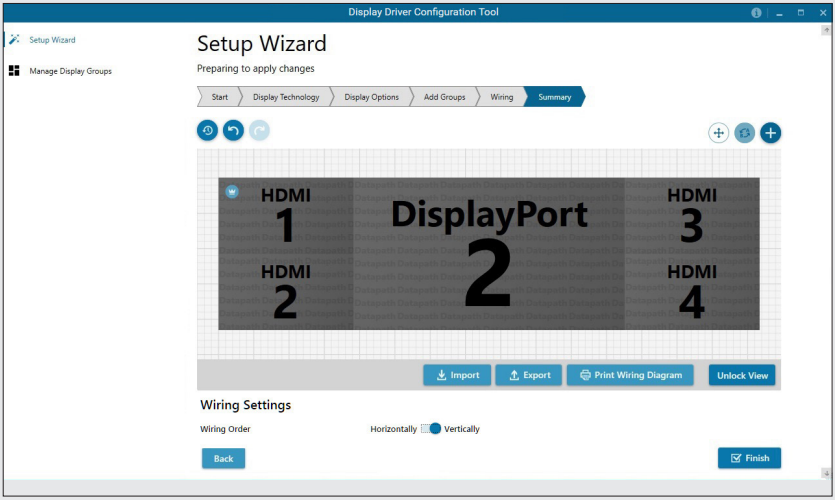


7.3.12 Wiring

How do you want to wire up your wall controller?

The DDCT can recommend the best wiring configuration for your system, ensuring the load is balanced between the graphics hardware. Click on "Recommended" for the optimal configuration for your system.

Should you wish to manually wire your system and decide for yourself which output is connected to which display, click on "Custom". You will be next be presented with the Summary Page:



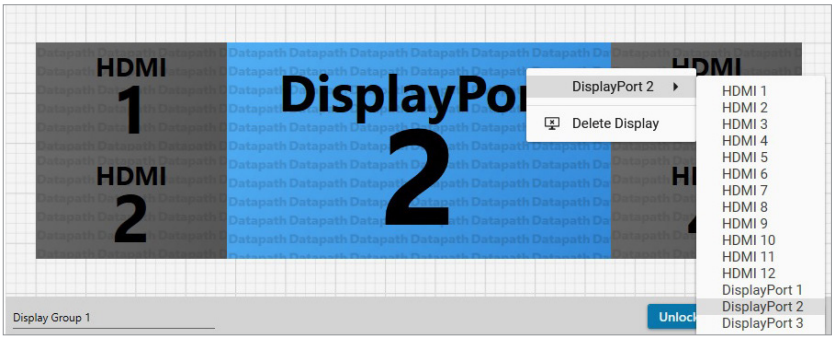
If you chose to have the DDCT configure your wiring then the page will display the recommended connections, as shown above. You can print a copy of the wiring diagram using "Print a Wiring Diagram".

***Note:** The Datapath Diagnostic Suite must be installed on the system to print a wiring diagram.*

To manually select the outputs, right click on the display group and select "Edit". You can then select each individual display and allocate your preferred output. Right click on a selected display to reveal the list of outputs available:

Import

Click on "Import" to import a previously saved layout. It should be noted that if the system the layout is being



imported to does not have the hardware capability to run the layout, the imported layout will be rejected.

Once imported onto the system, the layout can be edited in the "Manage Display Group" page.

Export

Click on "Export" to generate and export a layout as a .wall file. The layout can then be imported onto another system.

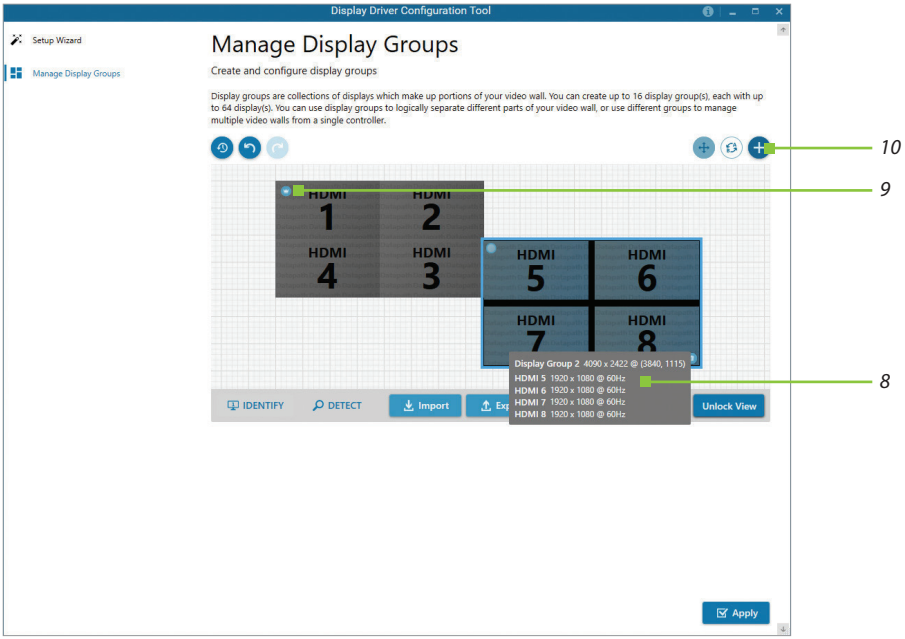
When all outputs have been allocated, either "Recommended" or "Custom", click on "Finish". You will then be prompted to save the changes to your video wall and restart your system.

7.3.13 Manage Display Groups

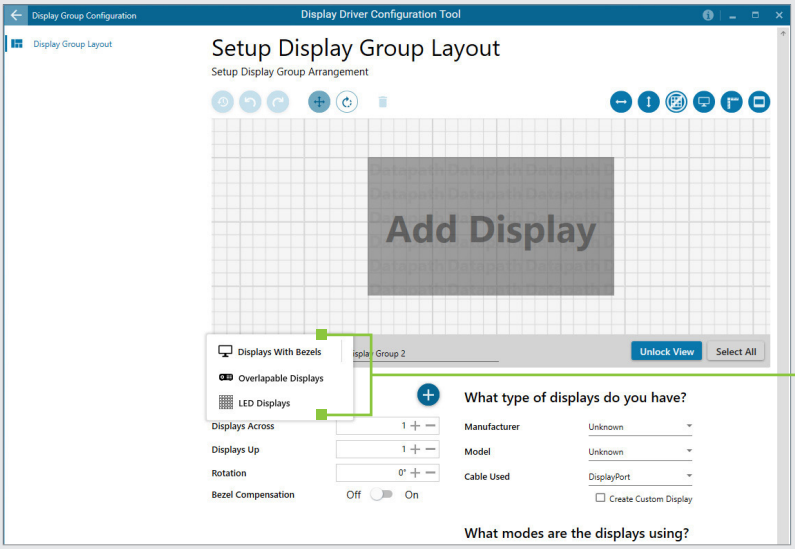
Display groups are collections of displays which cover different portions of your video wall. Display groups can be used to separate different areas of your video wall or use different groups to manage multiple video walls from a single controller.

The "Manage Display Groups" dialogue allows you to edit current groups and create new groups. In the example above, two groups have been created.

8	Hover the mouse over each group to display basic information about the display group: The group name, the resolution and details of each input:



9	The "Primary Display" can be assigned to any group by clicking on the icon and toggling between each display group.
10	To create a new display group click on the "Create a new display group" icon and the following dialogue is displayed.
11	Create a new display group by first selecting the type of technology you will be using for your displays by clicking on the dropdown list. Continue to create your new group layout in the same way you created your initial display group.



7.4 Opening WallControl 10 (Optional)

WallControl 10 is an optional video/display wall management software application specifically designed for Datapath Wall Controllers. WallControl 10 consists of two separate elements that work together to enable you to control the display wall, the Client (application) and the Server.

The WallControl 10 Start Menu has four options, WallControl 10 Client, WallControl 10 Server, WallControl 10 Security Server and WallControl 10 Security Administration Client.

7.4.1 WallControl 10 Server

The WallControl 10 Server is used to display Vision/IP and application windows. The Server element of WallControl 10 needs to be installed on the machine to which your video wall is connected. The Server is the machine that drives your display wall. A Server can be located locally or via a network. WallControl 10 will automatically seek out and display all servers available to you. Each server can run multiple display walls depending on the version of WallControl 10 you have. Before opening the Client interface, you may need to start the Server manually by clicking on it in the Programs menu. The WallControl 10 Client will only detect Servers that are running.

Start | All Programs | WallControl 10 | WallControl 10 Server

7.4.2 WallControl 10 Client

The WallControl 10 Client should be installed on the machine that has been identified to control the display wall. This could be any machine on the network including the machine driving the display wall. The application element of WallControl 10 is used to control the position, size and properties of each window displayed on the Server machine.

The WallControl 10 Client can be installed on systems running up to and including Windows 10 Operating Systems.

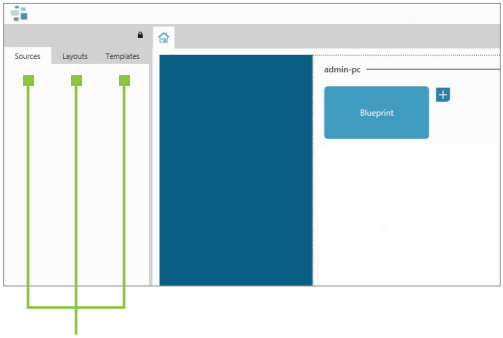
Open the WallControl 10 Client application:

Start | All Programs | WallControl 10

7.4.3 WallControl 10 – User Interface

Open the application by selecting WallControl 10 Client and the user interface will be launched.

A detailed summary of WallControl 10 features can be found in Chapter 8, alternatively a comprehensive help file is available within the application.



Tools: Sources, Layouts & Templates

7.4.4 WallControl 10 Security Administration Client

The WallControl 10 Security Administration Client allows Administrators to assign specific user roles on a wall-by-wall basis. Users are assigned roles based on their Windows® login. Roles can be structured to allow only specific tasks to be carried out on a wall using the WallControl 10 Client. For example, a user can be assigned a role allowing unrestricted access on one wall but assigned a role on another wall which only allows the launching of pre-determined layouts.

The application allows you to carry out the following User Rights Management Tasks:

- Import users from the Windows® Active Directory into the application database.
- Create and edit roles.
- Assign permissions to providers, layouts and sources giving specific roles access to them.
- Assign Roles to walls

CHAPTER 8 – SOFTWARE

This Chapter will cover:

- WallControl 10
- Utilities

8.1 WallControl 10 (Optional)

WallControl 10 provides users with interface required to quickly and effectively manage content that includes video captures, IP streams and local applications. Users can place any input source on any part of the video wall using a simple drag and drop operation. Precise positioning of each piece of content can be achieved through the mouse and keyboard or via the template tool.

The Template Tool allows users to not only place their own templates across an entire wall which evenly distributes content but WallControl 10 also allows users to apply a template to an individual window so multiple windows can be grouped together and moved as a single item.

WallControl 10 has a tabbed interface that allows a user to manage multiple video walls.

WallControl 10 allows multiple walls to be delivered by a single VSNMini 300. Walls in separate areas of a building can be independently driven from a single location. Multiple walls can be easily set up using the Wall Management functionality and if required each wall can be assigned a unique set of sources or video resources.

Before opening the Client and Security Administration Client interfaces you may need to start the WallControl 10 – Server by clicking on it in the Programs menu. Starting the Server loads both the WallControl 10 Server and the WallControl 10 Security Server. The WallControl 10 Client will only detect servers that are running. The Server icon is displayed in the System Tray.

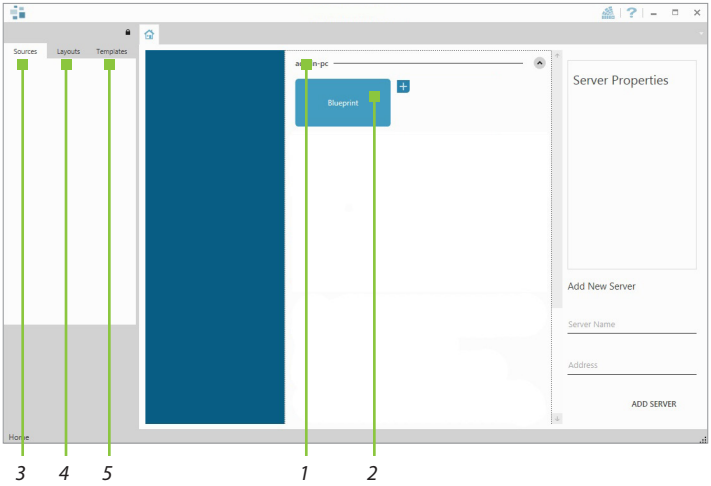
Start | All Programs | WallControl 10 – Server

Server icon

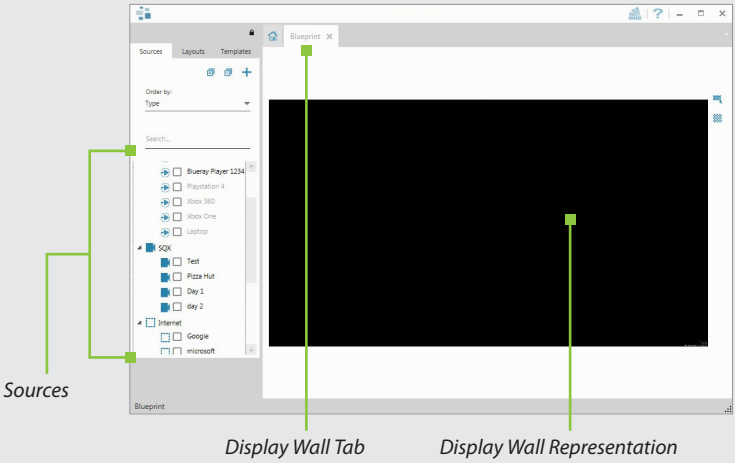
Opening the WallControl 10 Client

Start | All Programs | WallControl 10 – Client

The WallControl 10 – User Interface



1	Indicates the server you are connected to.
2	A representation of the display wall(s) associated with the server.
3	Sources Tab – Displaying all the sources connected to the server for use on the display wall.
4	Layouts Tab – Used to save, recall and share display wall layout configurations.
5	Templates Tab – Use templates to assist in the design of specific display wall layouts.



When opened, the display wall tab shows a live representation of the physical wall and the sources available to display on it. To place a source on the video wall, simply click on the required source in the sources tab and drag it onto the display wall representation.

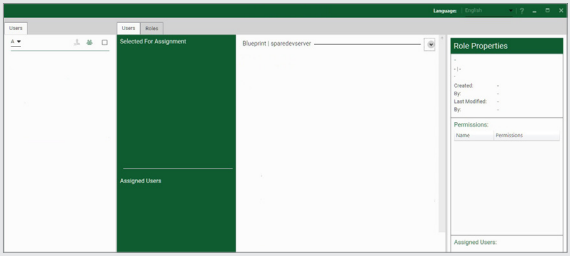
The application help file contains information explaining how multiple sources can be selected, how to use and create templates and how to save, recall and share layout files.

The WallControl 10 – Security Administration Client (Only Available with WallControl 10-Pro)

A WallControl 10-Pro serial dongle must be inserted into a vacant USB port. If the dongle is removed or swapped, the Security Client will not open and an error message is displayed, therefore it is important the dongle is not removed.

If you have purchased WallControl 10 Pro, the licence dongle can be located in the accessories box.

Start | All Programs | WallControl 10 – Security Administration Client



The WallControl 10 – Security Administration Client allows Administrators to assign specific users to roles on a wall-by-wall basis. For example, a User can be assigned a role allowing unrestricted access on one wall but assigned a role on another wall which only allows the opening of pre-determined layouts.

Prior to the Security Client being used for the first time, the SecurityOnOff.exe program must be run to enable security protection for the application. To run the SecurityOnOff.exe, ensure you are logged into Windows® with Administrator Rights.

Locate and double click on the SecurityOnOff.exe file:

Program Files (x86) \WallControl 10\ Security Server\SecurityOnOff

A WallControl 10-Pro serial dongle must be inserted into a vacant USB port. If the dongle is removed or swapped, the Security Client will not open and an error message is displayed therefore it is important the dongle is not removed.

The WallControl 10 Security Application help file contains information on how to:

- Import users from the Windows® Active Directory into the database.
- Create and edit roles.
- Assign permissions to providers, layouts and sources giving specific roles access to them.
- Assign roles to walls.

8.2 Software Utilities

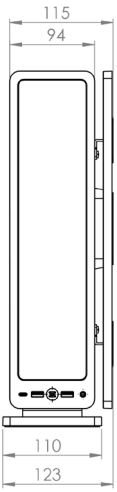
Datapath provides a group of software utilities designed to assist you fine tune your system for specific individual system requirements. All the software utilities can be found on the Recovery Media that was shipped with your system, alternatively, you can download the most up-to-date versions from the Downloads page on the Datapath website.

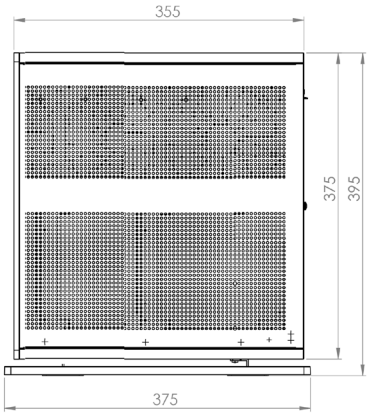
CHAPTER 9 – SPECIFICATIONS

This Chapter will cover:

- Technical drawings of the chassis
- How to obtain the technical specification of the VSNMini 300

9.1 Technical Drawings





9.2 Technical Specifications

Detailed technical specification datasheets for the VSNMini 300 range of wall controllers can be downloaded from the Datapath website.

CHAPTER 10 – WARRANTY

10.1 Warranty Statement

Datapath provides a return to manufacturer warranty on all its products for a standard 36-month period, see the table below for non-standard warranty periods. It is important that RMA procedures are followed prior to products being returned as often issues can be resolved quickly without the need for products being returned.

Component	Standard 36 Month Warranty	12 Month Warranty
Image2K and Image4K Graphics Cards	X	
Vision Capture Cards (including ActiveSQX)	X	
SBC		X
Power Supply Units		X
Hard Drives, RAM, Fans		X

10.2 RMA Returns Policy

If your Datapath product is not working as you expect, we recommend that you contact Datapath Ltd in the first instance for support. Many issues that may first appear as hardware faults are actually installation or set-up problems and can normally be resolved without having to ship any hardware back to us. This route is therefore often the quickest, easiest and cheapest way of solving the problems that you are experiencing. Please email support@datapath.co.uk including as much detail regarding the failure as possible (for example: system description, signal types, input or output resolutions and any other relevant background information).

It is essential you know the serial number of the product(s) when contacting us.

If it appears that the fault is most likely to be hardware related, please email rma@datapath.co.uk stating the serial number and as much additional information regarding the nature of the failure as possible. Detailed explanation of the fault will help us to better identify the problem and will direct additional focused testing if necessary. We will then issue an "RMA Number" to you.

At the time that the "RMA Number" is issued, we will inform you of the warranty status of the product and the cost of the repair, if appropriate – see paragraph **(b)** below. The product should then be returned, at your cost, to Datapath Ltd following the steps below.

There are 4 possible scenarios when a product is returned to us:

(a) The product is in warranty and is either found to be genuinely faulty or no fault is found. In these cases, the product will be repaired as necessary or replaced by a new or previously repaired product and returned to you at our cost.

(b) The product is out of warranty and is found to be faulty. .
The product if possible, will be repaired or replaced at fixed cost, as stated in the RMA authorisation email. To cover this payment, you will be required to either provide a Purchase Order or Credit Card details, when the product is returned to us. (However, we will not issue an invoice or charge the credit card until the repair has been completed and is about to be returned to you)

(c) The product is in warranty but is found to be damaged by misuse.
This will be treated as **(b)** above.

(d) The product is out of warranty and is obsolete..
In the unlikely situation that the product can be neither repaired nor replaced, because some of its components are obsolete and we have no swap-out stock left, then the product will either be returned to you, or disposed of at your request, with no charge.

PLEASE NOTE: Datapath will not accept responsibility for the safety, integrity or security of any programmes, data or other content held on hard drives or any other type of rewritable media which is sent to us either separately or as part of any equipment returned to us for repair or for any other purpose. Customers are advised to take back-ups of anything that they deem to be valuable or important before returning the equipment to us and anything which is confidential should be erased from the media before it's returned

Once the RMA Number has been issued, you need to raise your Purchase Order or supply your credit card details and return the product to: Datapath Ltd, Bemrose House, Bemrose Park, Derby DE21 6XQ, United Kingdom – securely packed and with the RMA Number clearly displayed on the outside of the box. To prevent unnecessary carriage and handling, please only send back products or accessory items you believe to be faulty.

In the case of paragraph (c), the fixed charge will be levied after we have seen the product and identified the misuse. In this case we will request you to issue a purchase order or provide credit card details before any repairs are completed.

Our policy is to return the repair (or swap-out) to you within 10 UK business days of receipt.

CHAPTER 11 – ADVANCED USERS

This chapter is aimed towards advanced users and covers the following:

- WallControl 10 Command line Interface
- Software Development Kit (SDK)?
- Replacing Cards
- Updating Firmware
- System Recovery

11.1 WallControl 10 – Command Line Interface

The WallControl 10 command line interface can be accessed from a command prompt and also by using Telnet for issuing commands remotely, specifying wcmd.exe.

If you intend using a Telnet connection, the following procedures should be followed prior to using the Telnet Client:

- Run the WallControl 10 Telnet Server:
  C:\Program Files\WallControl 10\Telnet Server\WallControl 10 Telnet Server.exe (double click on the .exe file)

This will start the WallControl 10 Telnet Server and ensures it runs continually after the machine is rebooted.

- Switch on the Telnet Client: Control Panel/Programs and Features/Turn Windows features on or off.

Ensure the Telnet Client checkbox is selected.

- Type "telnet" into the command prompt followed by the name of the machine you wish to connect to, by default Telnet is accessible on port 23, if you have it configured for something different then you will need to specify the port number to connect on. If the machine name contains spaces then enclose the name in quotes, for example:
  telnet 127.0.0.1 or *telnet 127.0.0.1 23*

The command line arguments are grouped into three categories:

- Information
- Action
- Authentication

Command line arguments are provided with both a long switch and a short switch where shown.

Information Commands

Long Switch	Short Switch	Description/Example
-help	-?	Displays a list of available command line arguments and some examples.
-exitcodes	-ec	Displays a list of all known exit codes.
-layouts	-l	Displays a list of all layouts on the server.
-providers	-prs	Displays a list of all providers installed in the system.
-openwindows	-ow	Displays a list of all windows currently open on the wall.
-inputs		Displays a list of available inputs in the following format: ***Alias="friendly name", Provider="web", Input="http://xxxxxxxx"***

Action Commands

Long Switch	Short Switch	Description/Example
Inputs		
-provider	-pr	**-provider=*{Capture|Video|Word|Application|Quant|Image|IPDecode|Web|Pdf|Remote}*** Target a type of provider on the server. The types of Provider that may be available are: Images, MS Word, IP, Internet, Quant, Applications and PDF providers. **wcmd.exe -provider=<*provider*> –id=<*window number*> -input=<name | identity> –window=<left>,<top>,<width>,<height>**
-input	-in	**-input=*name*** The name of the input to target on the server. The name of the input will depend on the type of provider being used. For example, if the input you are selecting is from the Capture then the input name will be a number from 1 upwards. For other Providers (IP) it will be a friendly name. If the input comes from the Video then the full path is required. **wcmd.exe -provider=<*provider*> –id=<*window number*> -input=<name | identity> –window=<left>,<top>,<width>,<height>**
-addinput	*-ai*	Add a new source. Currently only available for IPDecode and Web sources. **addinput=*"rtsp://10.0.0.1:522/Ch2*** **"addinput=*"http://www.google.com"*** When adding a new input, the URL or IP stream address must be unique and not already exist in the list of sources. **wcmd.exe -provider=<*provider*> -addinput=<*url*> -alias=<*name*>**
-alias	-a	Use in conjunction with **-addinput** to allocate a friendly name. **-alias=*"Camera 1"***
-readonly	-ro	Use in conjunction with **–addinput** to specify if the source alias is editable. **-readonly="true"** Renders the input alias uneditable. **-readonly="false"** Renders the input alias editable. **wcmd.exe -provider=<*provider*> -addinput=<*url*> -alias=<*name*> -readonly=<true | false>**
-shared	-sh	Use in conjunction with **-addinput**. **-shared="true"** Places the source in the Global Media Store. **-shared="false"** Places the source in the Local Wall Content Store. **wcmd.exe -provider=<*provider*> -addinput=<*url*> -alias=<*name*> -shared=<true | false>**

Action Commands

Long Switch	Short Switch	Description/Example
-streamusername	-sun	Used to specify a username for a stream source. Must be paired with password. **wcmd.exe -provider=<*provider*> -addinput=<*url*> -alias=<*name*> -streamusername=<*username*> -streampassword=<*password*>**
-streampassword	-spwd	Used to specify a password for a stream source. Must be paired with username. **wcmd.exe -provider=<*provider*> -addinput=<*url*> -alias=<*name*> -streamusername=<*username*> -streampassword=<*password*>**
-deleteinput	-di	Deletes a specified input from the Local source repository. Currently only available for IPDecode and Web sources. **-deleteinput=<*input url*>** Only sources specific to a wall can be deleted. Global sources cannot be deleted using the **-deleteinput** switch. **wcmd.exe -provider=<*provider*> -deleteinput=<*name*|*identity*>**
-createcrop	-cc	Allows a user to create a permanent crop of a specific input. Used in conjunction with **-id**, **–provider** and **–input**. **wcmd.exe -machine=<*server*>:<*port*> -provider=<*Capture* | *IpDecode*> -input=<*input*> -alias=<*name*> -createcrop=<top>,<left>,<width><height> -sourcesize=<sourceWidth>,<sourceHeight>**
-sourcesize	-sz	Used in conjunction with **-createcrop**. To create a crop, the size of the original source is required when using the **-createcrop** switch as the source is not open prior to the crop being created. For example: **wcmd.exe -machine=<*server*>:<*port*> -provider=<*Capture* | *IpDecode*> -input=<*input*> -alias=<*name*> -createcrop=<top>,<left>,<width><height> -sourcesize=<sourceWidth>,<sourceHeight>**
Layouts		
-layout	-ol	**-layout=*layout file*** Open a specific layout file. If the layout name contains spaces then enclose the name in quotes, for example: **wcmd.exe -layout=*"CCTV One"***

Action Commands

Long Switch	Short Switch	Description/Example
-schedule	-s	Used in conjunction with the **–layout** command to create a scheduled task to execute a specific layout. This creates a single scheduled task: **wcmd.exe -layout=<*name*> -schedule=<*datetime*>** Specify date time format as *"DD/MM/YYYY HH:mm:ss"* dependent on windows culture settings.
-savelayout	-sl	**-savelayout=*name*** Allows you to save the current wall view as a layout. If the layout name contains spaces then enclose the name in quotes, for example: **wcmd.exe -savelayout=*"Layout One"***
-deletelayout	-dl	Delete a specific layout file. If the layout name contains spaces then enclose the name in quotes, for example: **-deletelayout=*"CCTV One"*** If User Rights Management is enabled, only Layouts located within the Layout store can be deleted. Any attempt to delete Layouts saved locally will result in an error message being displayed.
Walls		
-getpowerstate	-gps	**wcmd.exe -getpowerstate** Obtains the power state of the compatible displays for the current wall, valid results are On and Off. For example: **wcmd.exe –machine**:*mywallserver:8081* **-getpowerstate** Valid results are **on|off**. When used locally on the controller you can obtain the power state of the "Blueprint" wall by omitting the **–machine** switch. For example: **wcmd.exe -getpowerstate**
-setpowerstate	-sps	**wcmd.exe –machine -setpowerstate**=*on|off*> Sets the power state of the compatible displays for the current wall. Valid states are on|off. **Note: A delay can occur when setting the power state due to the hardware.**
-getpowerlevel	-gpl	**wcmd.exe –machine getpowerlevel** Gets the power level of the screens for the current wall, valid results are **Normal**, **Eco**, **EcoAdvanced**, or **Bright**.

Action Commands

Long Switch	Short Switch	Description/Example
-setpowerlevel	-spl	**wcmd.exe -setpowerlevel=<Eco | EcoAdvanced | Bright | Normal>** Sets the power level of the screens for the current wall, valid levels are **Eco**, **EcoAdvanced**, **Bright** and **Normal** **Note: A delay can occur when setting the power level due to the hardware.**
-wallstate	-wallstate	It is possible to get the current state of all walls or an individual wall by specifying its name. An example of getting all the wall states: **wcmd -wallstate** An example of getting a specific wall state: **wcmd -wallstate=*wall name***
-startwalls	-startwalls	Starts all walls on the specified server. **wcmd-startwalls** By default, this will only start all walls set to AutoStart, if you require it to start all walls regardless of the autostart setting. **wcmd -startwalls=all**
-startwall	-startwall	Starts a specified wall on the server. **wcmd -startwall=<*wall name*>**
-stopwalls	-stopwalls	Stops all the walls on the specified server. **wcmd -stopwalls**
-stopwall	-stopwall	Stops the specified wall on the server. **wcmd -stopwall=*wall name***

Action Commands

Long Switch	Short Switch	Description/Example
Window		
-window	-w	**-window=[left],[top],[width],[height]** Set the position and size of the window. Commas must be used between values. Must be used in conjunction with the **–id switch**. To display a Vision window a typical command line argument would be: To open a window: **wcmd.exe -provider=<*provider*> –id=<*window number*> -input=<*name* | *identity*> –window=<left>,<top>,<width>, <height>** To move/resize an open window: **wcmd.exe –id=<*window number*> –window=<left>,<top>, <width>,<height>**
-id		When a window is created it can be allocated in ID. To modify or close a window, specify its ID so the correct window is addressed. Only one window can exist on the wall at any time with the allocated ID. **wcmd.exe –id=<*window number*> -aspectratio=<true | false>**
-closewindows	-cw	Closes all open windows. **wcmd.exe -closewindows**
-closewindow	-c	Used with a specific ID will close that window. **wcmd.exe -id=<*window number*> -closewindow**
-windowstyle	-ws	Sets the style of the window. **wcmd.exe –id=<*window number*> -windowstyle=<BorderAndTitlebar | NoBorderAndTitlebar>** It can also be used with the open window command (**-window**)
-sendto	-st	Allows the user to send a selected window forward or backward, valid values are front and back. For example: **wcmd.exe –id=<*window number*> -sendto=<front | back>** It can also be used with the open window command (**-window**)

Action Commands

Long Switch	Short Switch	Description/Example
-aspectratio	-ar	IpDecode, Video and Capture sources only. Allows the user to switch aspect ratio on or off <*true*|*false*> for a selected capture. For example: **wcmd.exe –id=<*window number*> -aspectratio=<true | false>** **Note: when applying aspect ratio to IpDecode sources it is advisable to send the command to a source that is already open and decoding.** It can also be used with the open window command (**-window**)
-audio	-au	Enables or Disables audio for Video and Capture sources only. **wcmd.exe –id=<*window number*> -audio=<[on/true] | [off/false]>** It can also be used with the open window command (**-window**)
-pixelformat	-pf	Used with a Vision source only = Auto, RGB565,RGB888 or YUY2 **wcmd.exe –id=<*window number*> -pixelformat=< Auto | RGB565 | RGB888 | YUY2>** It can also be used with the open window command (**-window**)
-rotate	-rx	Capture sources only. Allows the user to apply rotation to Capture sources, valid values are 0, 90, 180, 270, For example: **wcmd.exe –id=<*window number*> -rotate=<0 | 90 | 180 | 270>** It can also be used with the open window command (**-window**)
-hscroll	-hs	Specifies a horizontal scroll offset within the web page specified in pixels. Only used with a Web Provider. **wcmd.exe –id=<*window number*> -hscroll=<*pixels*>** It can also be used with the open window command (**-window**)
-vscroll	-vs	Specifies a vertical scroll offset within the web page specified in pixels. Only used with a Web Provider. **wcmd.exe –id=<*window number*> -vscroll=<*pixels*>** It can also be used with the open window command (**-window**)

Action Commands

Long Switch	Short Switch	Description/Example
-refresh	-rf	Only valid for Web Provider. Allows a web page to be refreshed every X seconds. For example: **wcmd.exe –id=<*window number*> -refresh=<*seconds*>** It can also be used with the open window command (**-window**)
-zoom	-zm	Used in conjunction with the web provider. Specifies a zoom as a percentage. It can also be used with the open window command (**-window**) Example Usage: **-zoom=<*percentage*>** Minimum zoom is 25% Maximum zoom is 500% **wcmd.exe –id=<*window number*> -zoom=<*percentage*>**
On Screen Display (OSD)		
-osdfonts	-osdfo	Get a list of the fonts supported by the wall. **wcmd.exe -osdfont**
-osdvariables	-osdv	Get a list of the OSD variable placeholders. **wcmd.exe -osdvariables**
-osdtext	-osdt	Sets the OSD text content, required for all OSD calls. Using OSD defaults: **wcmd.exe -id=<*window id*> -osdtext=<*text*>** If you want to override any of the default OSD parameter append any of the below examples to end of the string above.
-osdtextwrapping	-osdtw	Sets the OSD word wrapping, true or false. Used as part of the definition of an OSD. Default = *true* **wcmd.exe -id**=<*window id*> **-osdtext**=<*text*> **-osdtextwrapping**=<*true* | *false*>

Action Commands

Long Switch	Short Switch	Description/Example
-osdtextbold	-osdtb	Sets the OSD text to be Bold, true or false. Used as part of the definition of an OSD. Default = *false* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdtextbold=<true | false>**
-osdtextitalic	-osdti	Sets the OSD text to be Italic, true or false. Used as part of the definition of an OSD. Default = *false* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdtextitalic=<true | false>**
-osdtextunderlined	-osdtu	Sets the OSD text to be Underlined, true or false. Used as part of the definition of an OSD. Default = *false* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdtextunderlined=<true | false>**
-osdfontcolour	-osdfc	Sets the OSD content's Font colour, in the format red, green, blue in the range 0-255. Used as part of the definition of an OSD. Default = *255,79,79* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdfontcolour=<red, green, blue>**
-osdfontsize	-osdfs	Sets the OSD's Font size, in the range 1-1000. Used as part of the definition of an OSD. Default = *36* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdfontsize=<*size*>**
-osdfont	-osdf	Sets the OSD's Font using the name of an installed font. Used as part of the definition of an OSD. Default = *Consolas or the first alphabetically listed font* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdfont=<*font name*>**

Action Commands

Long Switch	Short Switch	Description/Example
-osdbtransparent	-osdbt	Sets the OSD content's background to be transparent, true or false. Used as part of the definition of an OSD. Default = *false* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdbtransparent=<true | false>**
-osdbcolour	-osdbc	Sets the OSD content's background colour, in the format alpha, red, green, blue in the range 0-255. Used as part of the definition of an OSD Default = *255.0.0.0* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdbcolour=<alpha, red, green,blue>**
-osdscaled	-osds	Sets the OSD content to scale with window size or be fixed sized using scaled or fixed. Used as part of the definition of an OSD. Default = *fixed* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdscaled=<fixed | scaled>**
-osdhalignment	-osdha	Sets the OSD content Horizontal alignment, in the format left, center or right. Used as part of the definition of an OSD. Default = *left* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdhalignment=<left | center | right>**
-osdvalignment	-osdva	Sets the OSD content Vertical alignment, in the format top, center or bottom. Used as part of the definition of an OSD. Default = *top* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdvalignment=<top | center | bottom>**
-osdmargins	-osdm	Sets the margins around the OSD draw area, in the format left, top, right, bottom side. Used as part of the definition of an OSD. Default = *0,0,0,0* **wcmd.exe -id=<*window id*> -osdtext=<*text*> -osdmargins=<left, top, right, bottom>**
-removeosd	-rosd	**wcmd.exe -id=<*window id*> -removeosd**

Action Commands

Long Switch	Short Switch	Description/Example
System		
-machine	-m	**wcmd.exe -machine=<server>:<port> -closewindows** **wcmd.exe -machine=<*server*> -wall=<*wall name*> -closewindows**
-wall	-wn	This has been added so that users are not required to know about the random port numbers for direct connection to a wall, they can still be specified if required but not used in conjunction with the **-wall**=*wallname* switch as the value returned by the wall name will override anything provided by the user as part of the **-machine**=*server:port* command. **wcmd.exe -machine=<*server*> -wall=<*wall name*> -layouts**
-serverport	-sp	User to specify a custom port number which should be used to communicate with the desktop server. This will override the default port number *19821*. **wcmd.exe -serverport=<*port number*> -stopwalls**
-echo	-e	This allows the error level to be returned to the command line so that it can be used with AMX/Crestron controllers. If the -echo switch is not used then the exit code is not returned on the command line. For example: zero (0) represents a success and the exit code is printed to the output. **wcmd -layouts -echo** ExitCode: 0 *Layout1, Layout2* An exit code greater than zero is an error and is shown below. **wcmd -layout="Layout3" -echo** ExitCode: 3 Using the Command Line without the **-echo** switch. **wcmd -layouts** *Layout1, Layout2* **wcmd -layout="Layout3"** In these usage scenarios the user can detect the command line exit code by using the **%ERRORLEVEL%** value in DOS as previously (although that will not work in conjunction with AMX / Crestron, hence the **-echo** change).

Action Commands

Long Switch	Short Switch	Description/Example
-help	-?	**-help=-<*command*>** Example Usage: To return a list of all command switches and comment **wcmd -help** To return specific help for a command **wcmd.exe -helpwcmd.exe -help=<-*command*>**

Authentication Commands

Long Switch	Short Switch	Description/Example
-username	-un	Only relevant is the user is using User Rights Management (URM). If you are trying to connect to a machine other than the one you are using a username and password may be required: **-username=*"user name"*** **wcmd.exe -username=<*username*> -password=<*password*> -layouts**
-password	-pwd	Only relevant is the user is using User Rights Management (URM). If you are trying to connect to a machine other than the one you are using a username and password may be required: **-password=*password*** **wcmd.exe -username=<*username*> -password=<*password*> -layouts**

Example Commands

Below is a list of example commands:

Open a window using input number 2 positioned at the top left of the wall with a height and width of 500 pixels:

- wcmd –machine=10.0.0.21:8081 –id=1 –provider=Capture –input=2 –window=100,100,500,500

Open an video window using Input wildlife:

- wcmd –machine=10.0.0.21:8081 –id=5 –window=1920,1080,1920,1080 –input="C:\users\desktop\videos\wildlife.wmv"
  The full path is required for the input.

Change the source of Window 1 to a known internet source

- wcmd –machine=10.0.0.21:8081 –id=1 –provider=Web –input="google"

Note: *The input used must exist within the repository and the name "google" must exist as an internet source accessible via the source menu.*

Move Window 1 to a different position on the wall.

- wcmd –machine=10.0.0.21:8081 –id=1 –window=5000,450,500,500

Get a list of available layouts

- wcmd –machine=10.0.0.21:8081 -layouts

Save a layout

- wcmd –machine=10.0.0.21:8081 –savelayout="my layout"

Load a layout

- wcmd –machine=10.0.0.21:8081 –layout="my layout"

Schedule a task to load a layout

- wcmd –machine=10.0.0.21:8081 –layout="my layout" –schedule="15/05/2017 09:00:00"

Get a list of all open windows on the wall

- wcmd –machine=10.0.0.21:8081 –openwindows

Turning on/off the audio for an Capture window

- wcmd.exe -machine=10.0.0.21:8999 -id=1 -provider=Capture -audio=on

Adding a new web input source into the Global Media Store with an editable friendly name:

- wcmd -machine=10.0.0.1:522 -provider=web -alias=Google -addinput="http://www.google.com" -shared=true -readonly=false

Adding a new IPDecode source to a Local Wall Content Store with an uneditable friendly name:

- wcmd -machine=10.0.0.1:522 -provider=IPDecode -alias="Camera 1" -addinput="rtsp://10.0.0.1:522/Ch2" -shared=false -readonly=true

11.2 Display Driver Configuration Tool – Command Line Interface

It is possible to Import and Export Display Driver Configuration files via the Command Line. However, this will require Driver Install Version 5.0 or higher.

Import

To import and apply a Display Driver Configuration via the command line please use the following command:

- C:\Program Files\Datapath Drivers\ModeSetupTool\ModeSetupToolCmd.exe **-import=*"[path to file].wall"***

The command line tool will return one of three values when it has applied the new configuration:

0	The operation completed successfully and the new configuration is active.
1	The operation completed successfully, a reboot is required to enable the new desktop configuration.
2	The operation failed and the new configuration has not been applied.

If the command line operation fails then a more detailed error description can be found by loading the file into the graphical Display Driver Configuration Tool.

Export

To export the current Display Driver Configuration to a file, via the command line, please use the following command:

- C:\Program Files\Datapath Drivers\ModeSetupTool\ModeSetupToolCmd.exe **-export=*"[path to file].wall"***

The command line tool will return one of the following values when it has saved the configuration:

0	The operation completed successfully and the configuration has been saved to the specified file.
1	The operation failed and the file has not been saved.

11.3 Installing Additional Image2K/4K Cards

The maximum number of Image2K cards that can be installed in a system is eight and the maximum number of Image4K cards is six. It should be noted that Image2K and Image4K cards cannot be mixed in any system including an expansion chassis.

11.4 Installing CODEC Packs to Play Video

DGCPlay utilises the DirectShow codecs installed on the computer to playback a video file. A standard installation of Windows includes codecs for playing WMV files, plus some AVI and MPG files. Many video files require additional 3rd party codec files.

For many of AVI and MPG formats the open source ffdshow package will contain codecs which will allow playback using DGCPlay. ffdshow is available from:

http://ffdshow-tryout.sourceforge.net

MOV files are supported through QuickTime. By default QuickTime is not available through DirectShow. With additional software it is possible to make QuickTime video files available however. There are a number of codecs which
do this, for instance:

http://www.codecguide.com/download_kl.htm

Datapath does not provide any warranty or assurance that these examples will be suitable for commercial use. We simply list them as an example of those available through 3rd parties. Before deployment, we advise that any of the above as well as any other codec selected are thoroughly evaluated to confirm their suitability.

11.5 Firmware Updates

The procedures for updating the firmware of your cards can be found in the relevant user guide which is available on your Support Tile on the Start Menu. Check the Datapath website for the latest version of the user guides.

11.6 Restoring Windows

It is strongly advised that a Restore USB Flash Drive is created which can then be used to restore the operating system should any serious problems arise.

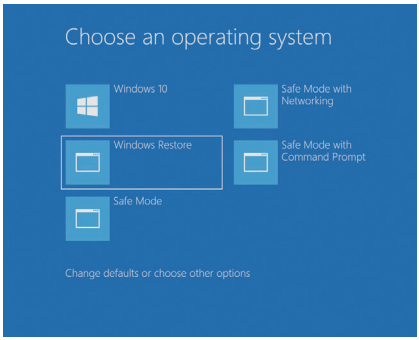
11.6.1 Creating a Windows Restore USB Flash Drive

To create your Restore USB Flash Drive you will need a USB memory stick with a minimum capacity of 32GB. It is recommended that once your restore flash drive has been created, it is stored in a safe place accessible to personnel who may be required to restore the system.

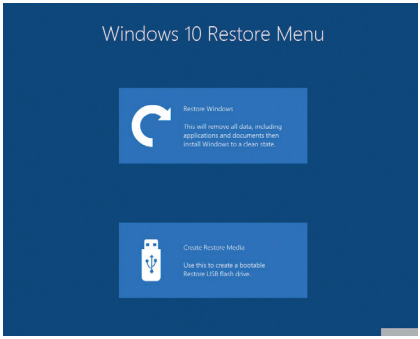
You will need to boot into the Windows Restore portal to begin the process of creating your Restore USB Flash Drive.

Switch on your machine and when the boot messages display the **"Choose an operating system"** screen, use the cursor keys to select **"Windows Restore"** as shown in the following dialogue.

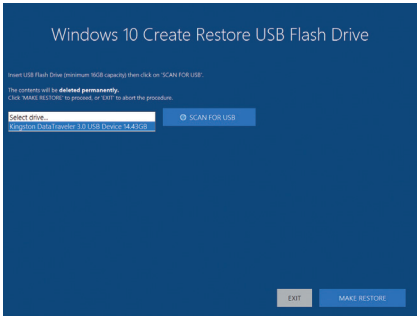
It should be noted that the dialogue is only displayed briefly, approximately 3 seconds.



This will lead you to the Windows Restore Menu as shown below:



Click on the "Create Restore Media" icon then insert the USB flash drive into a vacant USB slot (min capacity 32GB).



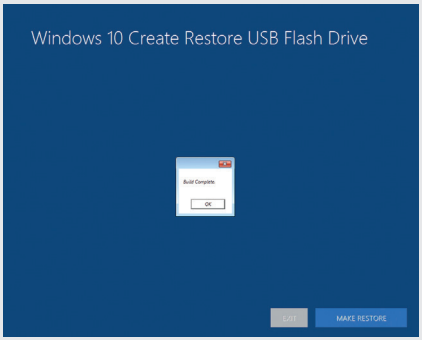
It should be noted that any data currently stored on the USB Flash Drive will be deleted permanently during this process.

Click on "**SCAN FOR USB**".

The application will now scan the system USB ports to detect your USB flash drive. Once the flash drive has been discovered, it will appear in the "Select Drive" dropdown list. Select the flash drive you wish to use from the list and click on "**MAKE RESTORE**".

Once the Windows Restore USB Flash Drive has been created a "**Build Complete**" dialogue is displayed:

Click on "**OK**" to complete the process.



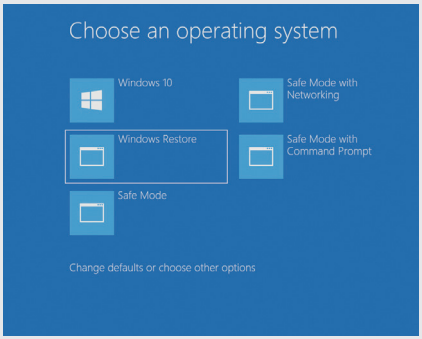
11.6.2 Restoring the Windows Operating System

To restore the Windows Operating System you will need to boot the system from your "**Restore USB Flash Drive**" or the "**Restore Partition**" on your hard drive. If restoring from the USB Flash Drive, place it into any vacant USB port prior to turning on the system.

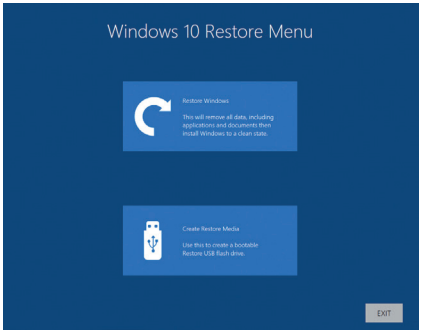
To restore from the USB Flash Drive, turn on the system and booting process commences, press the F7 key until the "**Select Boot Device**" dialogue is displayed. Select the Boot device (Restore USB Flash Drive). If available, it is recommended the UEFI device is selected. Once the Boot Device has been selected, click "**OK**" and wait until the "**Choose an operating system**" dialogue is displayed.

If you are restoring the Windows Operating System from the "**Restore Partition**" on your hard drive, turn on the system and wait until the "**Choose an operating system**" dialogue is displayed.

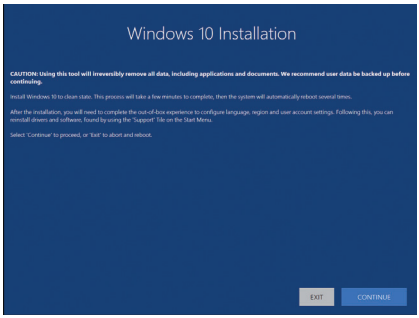
When the "**Choose an operating system**" dialogue is displayed select "**Windows Restore**" as shown below:



The "**Windows Restore Menu**" dialogue will then be displayed.



Click on the "**Restore Windows**" icon and the "**Windows Installation**" dialogue is displayed.



If restoring the Windows operating system using a USB Flash Drive, a check box is displayed in the bottom left corner of the dialogue box. The "**Create Restore Partition**" should be selected. This will create a new Restore Partition on the hard drive.

Click "**Continue**" and you will be prompted to accept the Windows licence Agreement. Click on "**ACCEPT**" to continue with the installation.

Once the installation is complete the system will reboot and the out-of-box experience will commence, you will be required to configure the language
and keyboard as if using the system for the first time.

11.6.3 Install Display Drivers and Software

Once the Windows configuration process is complete, the Display Drivers need to be re-installed and if required, the Wall Control application software. The Display Drivers and WallControl 10 software can be found in the **Support Tile** on the **Start Menu.** For the latest drivers and software go to www.datapath.co.uk

CHAPTER 12 – CERTIFICATION AND COMPLIANCES

***Caution:** Changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment*

12.1 CE & UKCA

Class A Declaration of Conformity

Datapath Ltd Declares that this product complies with the essential requirements and other relevant provisions of;

- European Union Directives 2014/30/EU, 2014/35/EU, 2011/65/EU and 2015/863/EU
- UK Government Electrical Equipment (Safety) Regulation 2016, Electromagnetic Compatibility Regulation 2016 and RoHS Regulation 2012

A copy of our Declaration of Conformity is available on request.

12.2 FCC

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

12.3 Disposal

At the end of life all Datapath products should be disposed of as per local laws and regulations dictate. In the UK contact Datapath to arrange disposal. Our WEE registration number is WEEE/AA0005ZR.

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