



Video Management Tool

User Guide

PHILIPS

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Chapter 1

Introduction



Condé Nast Cafeteria
New York, NY

Welcome to Video Management Tool

Video System Manager Pro is an integrated hardware and software solution designed for video playback and visual effects display on Ethernet-based LED lighting installations.

- Video System Engine Pro (VSE Pro), the hardware component, processes and streams live video to installations comprising up to 250,000 LED nodes. Refer to the *Video System Manager Pro User Guide* for detailed instructions on configuring and using the hardware.
- Video Management Tool (VMT) software, included with VSE Pro, creates video maps that associate source video pixels with their destination nodes in a lighting system. This document describes how to create and edit video maps using VMT.

Key Features

VMT features include the following:

- Flexible, node-level mapping and individual node masking
- Automatic node distribution
- Merging of multiple maps
- Background image display
- Full backwards compatibility with legacy VSE hardware and VMT version 1.0 maps

About VMT and DMX Addressing

Every node in a lighting fixture is assigned a DMX address that VMT calculates and includes in the video map. When calculating DMX addresses, VMT assumes that each fixture's nodes are addressed sequentially starting at 1, and increments three channels per node (one channel each for red, green, and blue channels).

DMX addresses cannot be changed using VMT. It is important for the installer to understand this and set up fixtures and power supplies accordingly when configuring the lighting system.

Related Documents

The following PDF documents are available for download via the web from www.colorkinetics.com/ls/controllers/vsmpro/.

- *VSM Pro Product Guide*
- *VSM Pro Specification Sheet*
- *VSM Pro Installation Instructions*
- *VSM Pro Quick Start Guide*
- *VSM Pro User Guide*

You will need Adobe® Reader to view the documentation. You can download the latest version of Acrobat Reader at www.adobe.com.

Technical Support Contacts

Contact Philips Color Kinetics technical support if you have any questions about our products:

Phone

888.Full.RGB, press option number 3 (toll free US, Canada and Mexico)
617.423.9999, press option number 3 (toll worldwide)

Email

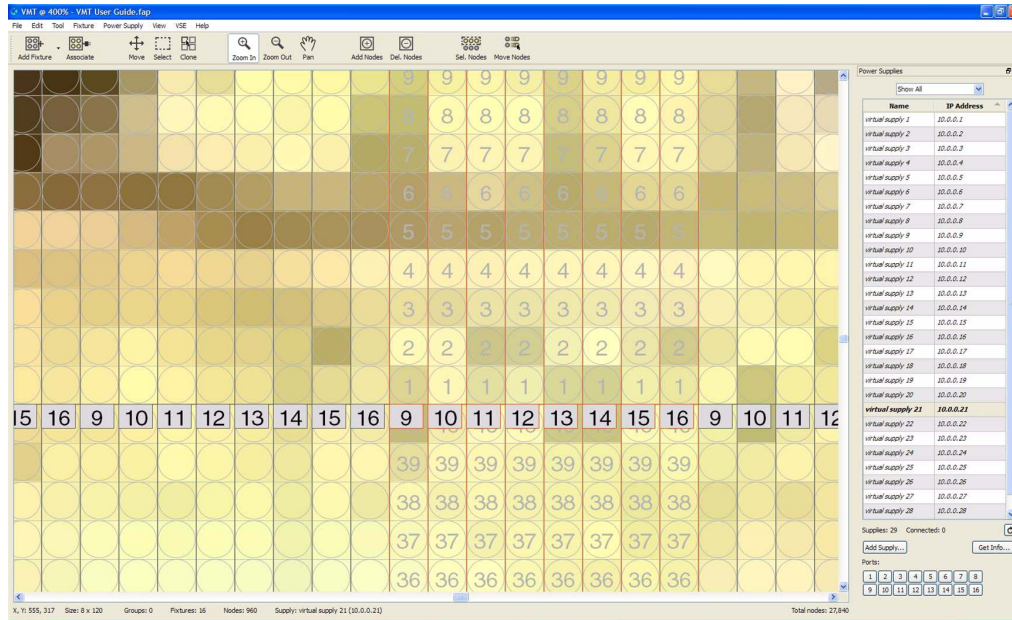
technicalsupport@colorkinetics.com

Web

www.colorkinetics.com/support/

Chapter 2

VMT Concepts



Overview

- When set up for video display, LED nodes (clusters of red, green, and blue LEDs) function as video pixels.
- A *video map* created in VMT accurately links each node to a pixel in the source video.
- VSM Pro hardware uses the *video map* to send video output to each node in an installation.
- You transfer the video map file from VMT on a personal computer (PC or Mac) to VSE Pro.
- The personal computer must be set up on the same dedicated lighting network as VSE Pro.

Creating Video Maps

In VMT, you create a video map by placing lighting fixtures on a grid representing the source video, and then associate the fixtures with their power supplies.

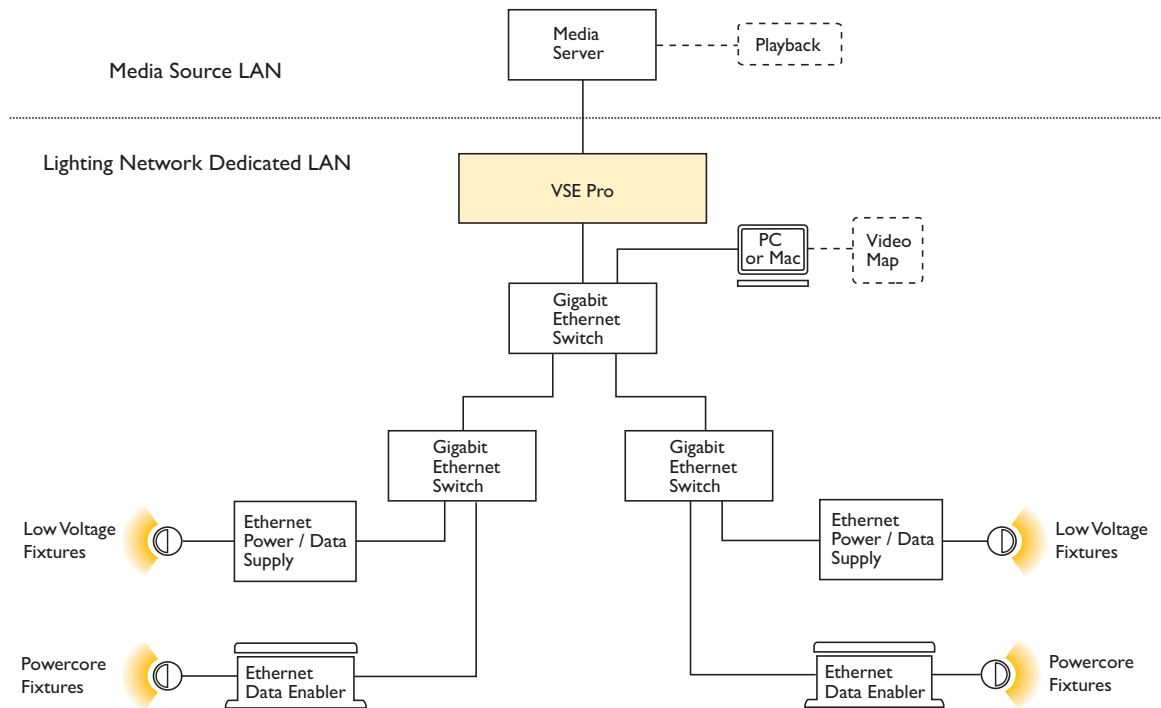
There are two methods for creating a video map: *placeholder* and *interactive*:

- Virtual mapping enables you to create a map off-site, prior to installation, without actually connecting to any lighting system components. First, based on the lighting design plan, you create a list of placeholder power supplies and their IP addresses in VMT. Next, using the tools in VMT, you create and properly orient fixtures on a grid. Finally, you associate fixtures with their placeholder power supplies.

- Interactive mapping enables you create your map during installation based on real-world power supplies. First, you connect VMT to the lighting network — VMT will automatically discover all power supplies. Next you create fixtures on a grid. Finally, you associate fixtures with their power supplies.

Transferring Video Maps

When the map is complete, you transfer the map to the VSE Pro. You can either connect to the VSE Pro and upload the map file, or save the file for later use. Note that the computer hosting VMT must be set up on the same dedicated lighting network as VSE Pro. See the *Video System Manager Pro User Guide* for additional details.



Troubleshooting

Once the map is transferred to VSE Pro, you can use test patterns and video optimization features to test and troubleshoot your map. See the *Video System Manager Pro User Guide* for details.

Chapter 3

Setup

System Requirements

VMT is compatible with Windows® PC and Mac OS X personal computers:

Windows®

Windows® XP / Vista

256 MB RAM

40 MB free disk space

CD-ROM or DVD drive

Mac OS X

Mac OS X 10.4.9 or greater

256 MB RAM

40 MB free disk space

CD-ROM or DVD drive

Software Installation

Before You Begin

VMT software comes factory loaded on the VSE Pro. To copy the software to your computer, first connect it to the lighting system network (or directly to a VSE Pro Ethernet port) as described under on the next page.

The latest version of VMT software is also available for download via the web at:
<http://www.colorkinetics.com/ls/controllers/vsmp/>.

Before you install VMT, close all running applications, disable virus protection, and ensure your computer has enough memory and free disk space.

Windows® Installation

To install the VMT software:

1. Use a web browser to open the VSE Pro interface at IP address 10.1.3.101.
2. Click **Video Management Tool v2.0 Windows Installer**.
3. The Video Management Tool v2.0 Setup Wizard window appears. Click **Next** to begin the installation.

4. After reading the license agreement, select **I Agree** to consent to the terms of the license agreement, then click **Next** to continue.
5. When the **Select Installation Folder** window appears, accept the default location, or click **Browse** to select a folder. Click **Next** to continue.
6. At the **Confirm Selection** window, click **Next** to start installation.
7. The **Installation Complete** window appears. Click **Close** to exit the wizard.

Mac OS X Installation

1. Use a web browser to open the VSE Pro interface at IP address 10.1.3.101.
2. Click the **Video Management Tool v2.0 Mac OS X Installer** link.
3. If your browser does not automatically mount the disk image, double-click the downloaded file to open (mount) it. This creates a mounted disk image icon on the desktop and opens a disk-image folder window containing the VMT application icon.
4. Drag the VMT application icon to a Hard Disk location such as the Applications folder. Close the disk-image folder window.

Note: Be sure to drag the VMT application out of the opened disk image window and onto your Hard Disk before running it. Do not double click the VMT icon in the disk image.

5. Select the mounted disk image by clicking it once.
6. From the **File** menu, select **Eject VMT**. Alternately, you can control-click the mounted disk image icon and choose **Eject**.
7. Drag the .dmg file to the trash (unless you want to keep it as a backup).

Network Connection

The VSM Pro lighting network is a dedicated LAN (local area network). The computer hosting VMT connects to any switch on the dedicated network using CAT-5e cable.

No configuration is required in most cases. If the VMT computer's network interface is set to obtain an IP address automatically (using DHCP), it will be configured by the VSE Pro when it connects to the dedicated lighting network.

Note that firewalls may need to be disabled to allow the connection. Please consult your network administrator about firewall issues.

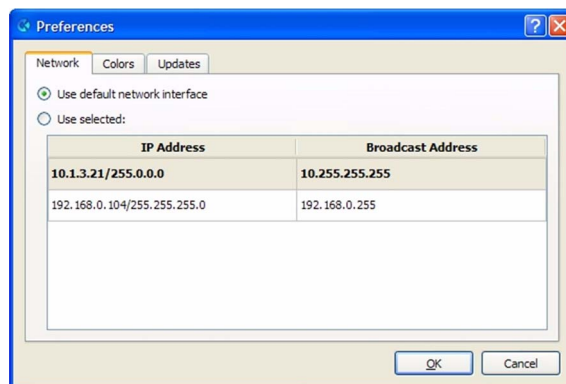
If you experience difficulty establishing a network connection, refer to *Network Options* on page 10, and *Manual Network Configuration* on page 45.

For more information about the lighting system networks, refer to the *Video System Manager Pro User Guide*.

Note: Philips recommends that you consult a third-party network consultant regarding specifics of your network components and configurations.

User Preferences

Network Options



If VMT fails to connect to the lighting system network, the problem may be that the computer has multiple network interfaces, for example Ethernet and wireless, and VMT is not using the right one. This can be solved by changing your network preference setting.

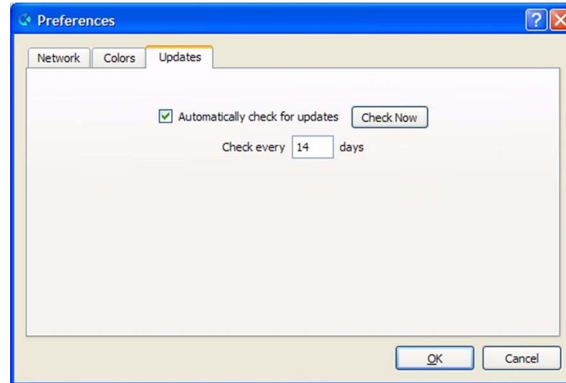
The **Preferences** dialog lists network options by IP address, followed by subnet mask. The IP address associated with the lighting network starts with 10.1.3.X.

If no IP address in the list starts with 10.1.3.X, you may need to configure your network interface manually. See *Manual Network Configuration* on page 45.

To select your network preference:

1. Select **Preferences** from the **Edit** menu.
2. Click the **Network** tab.
3. Select the network interface with an IP address starting with 10.1.3.X
4. Click **Use selected**.
5. Click **OK**.

Update Options

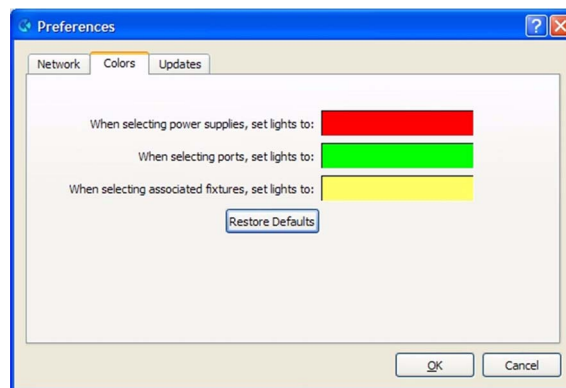


VMT software may be updated periodically. You can configure the application to automatically check for updates by enabling the **Automatically check for updates** option on the **Updates** tab. If a more recent version is available, you will be prompted to download it.

You can manually check for updates at any time by clicking **Check Now**.

These features require an Internet connection; they may not be available when you connect the computer to a dedicated lighting network.

Color Options



In the **Colors** tab of the **Preferences** dialog, you can change the colors displayed by lighting fixtures when their power supply or port is selected.

To change a display color:

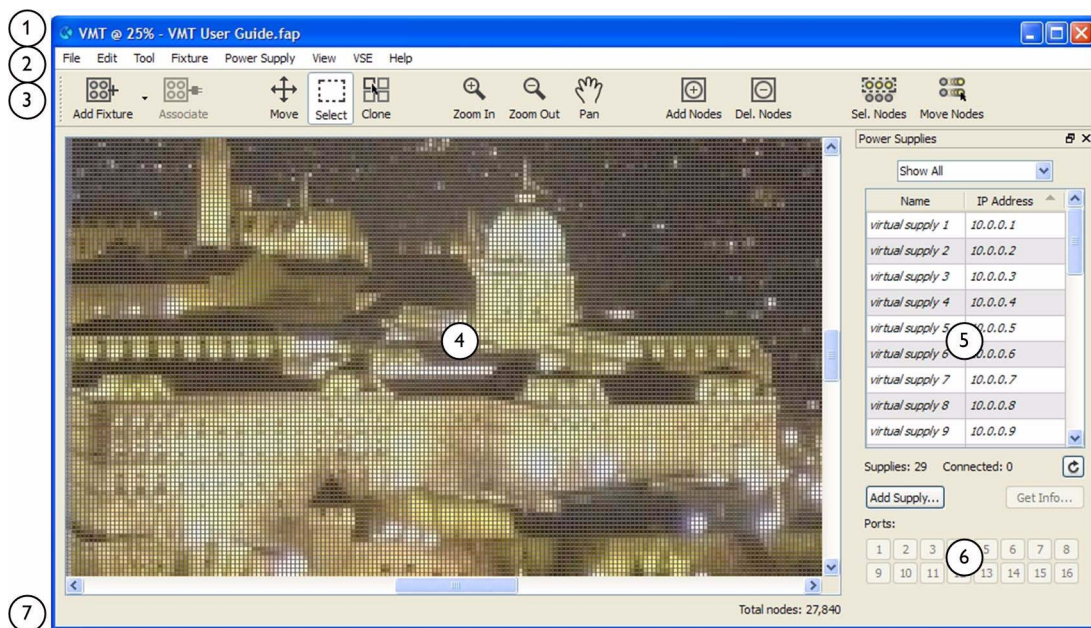
1. Select **Preferences** from the **Edit** menu.
2. Click the **Colors** tab on the **Preferences** dialog.
3. Click a color field and select a color in the **Select color** dialog.
4. Click **OK**.

Chapter 4

The VMT Interface

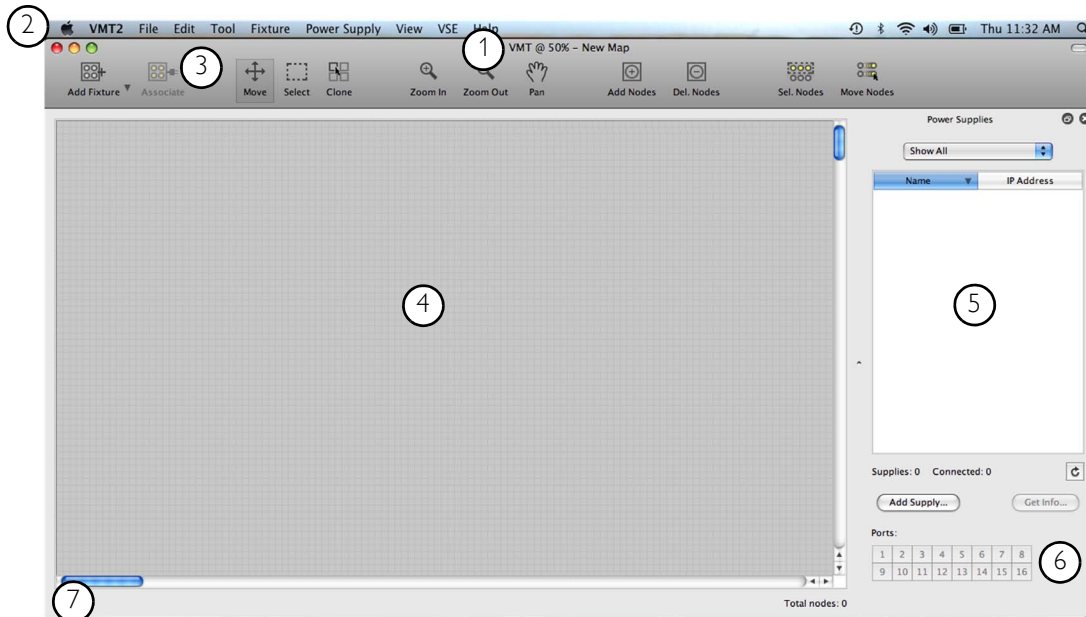
Identifying Areas of the Screen

Windows® PC Screen



1. Title Bar
2. Menu Bar
3. Toolbar
4. Map Window
5. Power Supply List
6. Port Selection Buttons
7. Status Line

Mac Screen



1. Title Bar
2. Menu Bar
3. Toolbar
4. Map Window
5. Power Supply List
6. Port Selection Buttons
7. Status Line

Title Bar

The *title bar* displays the zoom level and the name of the current map file.

Unsaved changes are indicated in the PC interface by an asterisk after the file name; in the Mac interface they are indicated by a dot in the center of the red close button.

Menu Bar

The *menu bar* organizes the software's commands into functional categories and allows you to select commands and options with the mouse. Keyboard shortcuts, when available, are shown to the right of each command. In the PC interface, you can open menus from the keyboard by pressing the [Alt] key plus the letter underlined in the menu label.

Menu commands are described in the next chapter.

Toolbar

The *toolbar* provides easy access to the frequently-used commands in the **Tool** menu. These are described under *Tool Menu* on page 21. The toolbar can be hidden via the **View** menu.

Map Window

The *map window* contains a 1024 x 768 grid on which you place virtual fixtures. The grid cells represent pixels in the video image.

Use the **Zoom Out / Zoom In** tools to view more or less of the grid. Use the scroll bars and the **Pan** tool to view a different section of the grid. Note that the grid lines are not shown at low zoom levels and there is an option to hide the grid lines in the **View** menu.

You can place bounding boxes that represent the video frame of common video formats on the grid by selecting **Resolution Guides** from the **View** menu.

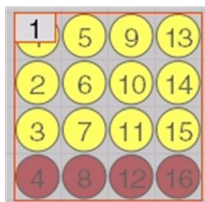
Background Image

For visual reference, you can add a background image to the map. VMT provides several test patterns and you can load your own graphic file; the .jpg, .jpeg, .png, .tif, and .tiff formats are supported.

To display a background image in the map window:

1. Select **Background Images** from the **File** menu.
2. Click one of the test patterns in the submenu or click **Select File** to load your own image.
3. You are prompted to select whether to scale, center, or tile the image.
 - If you want the image to fill the map grid, select **Scale to fit map** or **Repeat as tiles to fill entire map**.
 - If you want the image to fill the area covered by virtual fixtures, select **Scale to fit current fixture layout**.
 - If you do not want to scale the image, select **Center on map**.
4. Click **OK**.

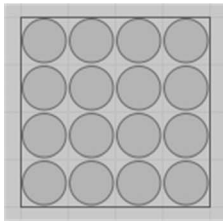
Virtual Fixtures



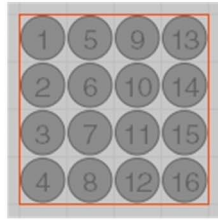
Every fixture in the LED lighting system must be represented on the map by a virtual fixture with the same node dimensions. A virtual fixture consists of circles bounded by a box, as shown above.

- The circles represent individual nodes.
- Red indicates masked nodes, that is, nodes displaying black output.

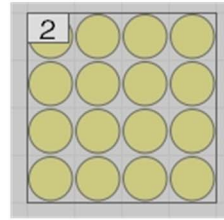
Other colors indicate fixture status, as shown below. Note: an associated fixture is one that has been linked on the map to a power supply port.



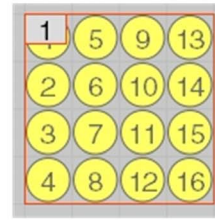
unassociated and unselected



unassociated and selected



associated and unselected

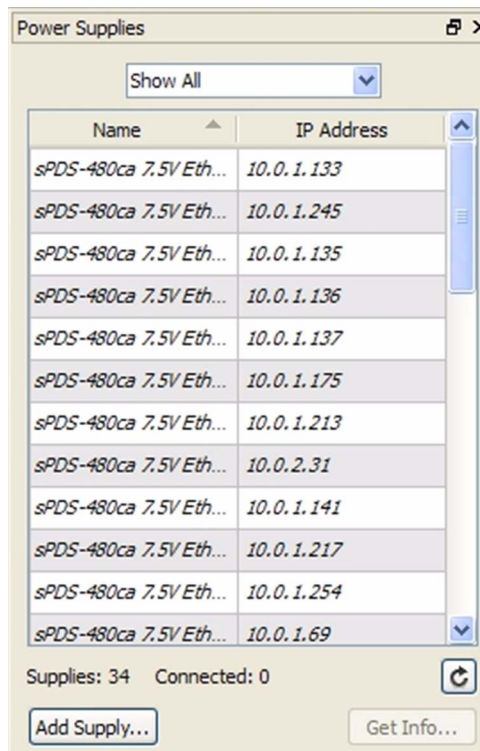


associated and selected

The numbers inside the circles designate node order. Node order can be easily changed. The number at the top left corner is the port number of the associated power supply.

The **View** menu contains options for hiding bounding boxes, node numbers, and port numbers.

Power Supply List



The power supply list displays both supplies detected in the lighting network and supplies associated with fixtures on the map. It can be closed or floated to maximize the map window. To display the power supply list, select **Show Power Supplies** from the **View** menu.

You can sort the power supply list by name and IP address by clicking the column labels. You can also filter the list to show power supplies with a particular status or power supplies within a designated IP address range by selecting a filter from the drop-down list.

Port Selection Buttons



The numbered port buttons activate any fixtures connected to the corresponding ports on the selected power supply. See *Determining Port Connections* on page 36.

Status Bar

X, Y: 338, 306 Size: 1 x 47 Groups: 0 Fixtures: 1 Nodes: 47 Supply: sPDS-480ca 7.5V Ethernet (10.0.1.141) Total nodes: 24,393

From left to right, the status bar displays the following information:

- Position of the top-left node of the selected object(s)
- Horizontal and vertical size of the selected object(s)
- Number of groups selected
- Number of fixtures selected
- Number of nodes selected
- Associated power supply for the selected fixtures
- Total number of nodes on the map

Chapter 5

Menu Commands

VMT Menu (Mac only)

Select...	To...
About VMT	Display software version information.
Preferences...	Modify user settings and check for software updates.
Services	Open a utility.
Hide VMT	Minimize the VMT window.
Hide Others	Minimize all other windows.
Show All	Show open applications.
Quit VMT	Close the application.

File Menu (Mac and Windows)

Select...	To...
New Map	Start a new map.
Open Map...	Open an existing map.
Append Map...	Add the contents of a saved map to the current map.
Background Images	Select a background image to display in the map window.
Save Map	Save the map with the current file name.
Save Map As...	Save the map with a different file name.
Export Map to CSV...	Generate a comma-separated values file with map data.
(A numbered file name)	Load a specific map.
Exit (PC only)	Close the application.

Edit Menu (Mac and Windows)

Select...	To...
Undo	Cancel previous operation.
Redo	Restore an operation cancelled with Undo.
Cut	Remove the selection and copy it to the clipboard.
Copy	Copy the selection to the clipboard.
Paste	Insert clipboard content on map.
Delete	Delete the selected object(s).
Duplicate	Make a copy of the selection.
Select All	Select all objects on the map.
Deselect All	Deselect all objects on the map.
Select Next Node	Select the next node.
Select Previous Node	Select the previous node.
Group	Bind selected fixtures together in a group.
Ungroup	Break a group into its component fixtures.
Move to Front	Bring the selected object to the top of the stack.
Move to Back	Send the selected object to the bottom of the stack.
Transform	Rotate and / or flip the selected fixture.
Distribute Nodes...	Space selected nodes evenly over a designated rectangle.
Mask Selected Nodes	Disable selected nodes.
Unmask Selected Nodes	Enable masked nodes.
Lock Selected Fixtures	Prevent selected fixtures from moving.
Unlock Selected Fixtures	Allow selected fixtures to move.
Preferences... (PC only)	Modify user settings and check for software updates.

Tool Menu (Mac and Windows)

Select...	To...
Associate	Link virtual fixtures to a port on the selected power supply.
Select	Select objects on the map.
Move	Select and move objects on the map.
Clone	Add copies of a fixture or group. See <i>Cloning Fixtures</i> on page 26.
Zoom In	Display a smaller section of the map.
Zoom Out	Display a larger section of the map.
Pan	View a different section of the map.
Add Nodes	Add nodes to a fixture.
Del. Nodes	Delete nodes from a fixture.
Sel. Nodes	Select individual nodes.
Move Nodes	Move individual nodes.

Fixture Menu (Mac and Windows)

Select...	To...
New Fixture...	Create a new fixture and add it to the map.
Add Fixture	Add a fixture from the library to the map.
Save to Library...	Save the selected fixture(s) to the fixture library.
Replace with	Replace the selected fixture(s) with a fixture from the library.
Set Node Order...	Change the node order of the selected fixture.
Unassociate	Break the link between selected fixtures and power supplies.
Set Layer	Move selected fixtures to a different layer.

Power Supply Menu (Mac and Windows)

Select...	To...
Add Supply...	Add a virtual power supply to the power supply list.
Remove Selected Supplies	Delete selected power supplies from the power supply list.
Refresh List	Update the power supply list.
Discover Nodes	Query the selected power supply for connected nodes.
Get Info...	View and edit information for the selected power supply.
Discover Nodes for All Power Supplies	Query all power supplies for connected nodes.

View Menu (Mac and Windows)

Select...	To...
Zoom In	Display a smaller section of the map.
Zoom Out	Display a larger section of the map.
Zoom 100%	Jump to 100% zoom level.
Layers	Select layers to hide / display.
Layers / Manage Layers...	Add, delete, and rename layers.
Resolution Guides	Place a box representing video frame on the grid.
Toolbar	Select toolbar options.
Show Power Supplies	Toggle display of the power supply list.
Show Fixture Boundaries	Toggle display of fixture boundary lines.
Show Grid	Toggle grid lines.
Show Background Image	Toggle display of background image (if loaded).
Send Background Image to Lights	Display the background image on the lighting fixtures.
Show Node Order	Toggle display of the fixture node order.
Show Port Indices	Toggle display of port numbers in virtual fixtures.
Script Interpreter...	Open the Script Interpreter window. Note: The Script Interpreter is for advanced users. Click Docs to view functions.

VSE Menu (Mac and Windows)

Select...	To...
<i>Status: (message only)</i>	See whether VSE Pro is connected or disconnected to VMT.
Pause VSE	Toggle VSE Pro output. (Output must be paused to access power supplies.)
Transfer Map to VSE	Send a map to the VSE Pro.
Fetch Map from VSE	Retrieve a map from VSE Pro.
Capture Image from VSE	Take a snapshot of the video to use as the background image.
VSE Website	Open the VSE Pro interface in a web browser.

Help Menu (Mac and Windows)

Select...	To...
About VMT (PC only)	Display software version information.
VMT Website	Visit the VMT website (requires an Internet connection).

Chapter 6

Placing Fixtures on the Map

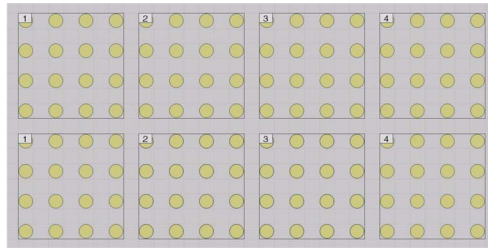
Overview

Every fixture in an LED lighting system must be represented on the video map by a matching virtual fixture. The section of the video frame displayed by a real fixture is determined by the grid position of its virtual fixture.

To place a virtual fixture on the map, you add it from the fixture library or create a new one. After that, there are many ways to work with it. This section describes the following:

- Create and save new fixtures
- Copy, duplicate, and clone fixtures
- Remove and replace fixtures
- Move, rotate, and lock fixtures
- Check and modify node order
- Move, add, delete, distribute, and mask nodes
- Group and ungroup fixtures
- Use groups of fixtures as templates
- Work with layers and overlapped fixtures

About Node Spacing



When there are too few lighting fixtures to display the entire video frame at 1:1 resolution, which is the case with most lighting systems, you must choose between showing a smaller portion of the frame at 1:1 resolution or displaying the full frame at lower resolution.

Often, you decrease resolution by sampling the video image to fit the display at the video source.

When using full resolution video, you can achieve lower resolution by spreading the virtual nodes evenly over the video frame. There are two ways to do this.

- You can use the **Distribute Nodes...** command in the **Edit** menu to space nodes evenly to fit the video frame. See *Distributing Nodes* on page 30.
- You can calculate the node spacing required to distribute the nodes evenly over the video frame and enter this spacing in the **Space Between Nodes** fields in the **New Fixture** dialog when creating fixtures.

The VSE Pro can also adjust resolution; refer to Chapter 7 in the *Video System Manager Pro User Guide* for details.

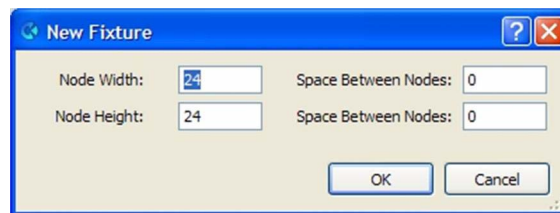
Creating and Saving Virtual Fixtures

Creating a New Fixture

You can create and save new fixtures as needed.

To create a new fixture:

1. Click **Add Fixture** on the toolbar or select **New Fixture** from the **Fixture** menu. The **New Fixture** dialog opens.



2. Enter the number of nodes that the real fixture measures across and down in the **Node Width** and **Node Height** fields.
3. Enter the horizontal and vertical node spacing, if any, in the **Space Between Nodes** fields.
4. Click **OK**. The new fixture is created and placed on the map.

Saving Fixtures

You can save your fixtures in the fixture library. You are not limited to saving single fixtures, multiple fixtures and groups can be saved as well.

To save a fixture in the library:

1. Select the fixture or fixtures to save.
2. Select **Save to Library...** from the **Fixture** menu or context menu.
3. Enter a name in the **Save As** dialog and click **OK**.

Adding Library Fixtures to the Map

The fixture library contains common Philips lighting fixtures and any fixtures that you create and save.

To add a fixture from the library to the map:

1. Click the ▼ button on the toolbar (to the right of **Add Fixture**) or select **Add Fixture** from the **Fixture** menu.
2. Select the desired fixture from the library list. The fixture is added to the map.

Three Ways to Copy Fixtures

After placing a fixture on the map, there are three ways to copy it.

Copying and Pasting

To copy using **Copy / Paste**:

1. Select a fixture or group.
2. Create a copy by selecting **Copy** from the **Edit** menu.
3. Paste as many copies as desired **Paste** from the **Edit** menu.

Duplicating Fixtures

To copy using **Duplicate**:

1. Select a fixture or group.
2. Select **Duplicate** from the **Edit** menu.

Cloning Fixtures

Cloning allows you to copy fixtures too, but has an advantage over copying and duplicating that saves time when associating fixtures. See *Using Groups as Templates* on page 30.

To copy using **Clone**:

1. Select the **Clone** tool from the toolbar or menu.
2. Place the cursor on the fixture or group to clone, preferably one that is not surrounded by other fixtures.
3. If possible, drag the mouse towards an unoccupied area of the map. Additional clones are created as you drag.

Replacing and Removing Fixtures

Replacing Fixtures

The **Replace with** command allows you to replace fixtures on the map with a fixture from the library.

To replace one or more fixtures:

1. Select the fixture to replace.
2. Select **Replace with** from the **Fixture** or context menu.
3. Select the fixture to insert from the library list.

Removing Fixtures

You can delete fixtures from the map by selecting them and then pressing the delete key or selecting **Delete** from the **Edit** menu.

Moving and Rotating Fixtures

After adding a virtual fixture to the map, you rotate and move it as required to position it over the grid cells that represent the video pixels to be displayed by the real fixture.

Rotating Fixtures

To rotate or flip a fixture:

1. Select the fixture to rotate or flip.
2. Select **Transform** from the **Edit** menu.
3. Select the type and degree of transformation from the context menu.

Moving Fixtures

To move one or more fixtures:

1. Select the **Move** tool.
2. Select the fixture or fixtures to move.
3. Drag and drop the fixture(s) to the desired location with the mouse, or move with the arrow keys.

Tip: Pressing and holding the shift key while pressing an arrow key moves objects 10 spaces.

Locking Fixtures in Place

You can prevent fixtures from moving by locking them. Locking does not prevent other operations.

To lock fixtures in place:

1. Select the fixture(s) to lock.
2. Select **Lock Selected Fixtures** from the **Edit** menu.

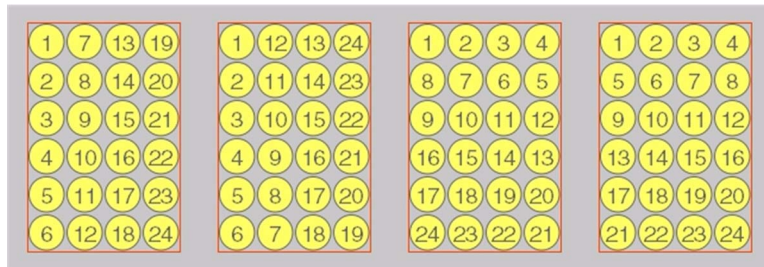
To unlock locked fixtures, use **Unlock Selected Fixtures**.

Working with Nodes

You can modify fixtures at the node level in several ways: nodes can be moved, re-ordered, added, deleted, distributed, and masked.

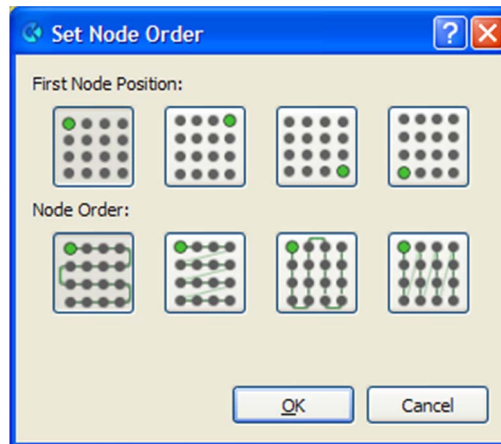
Modifying Node Order

Virtual fixtures are placed on the map with a default node order. Examples of node ordering schemes are shown below.



For correct display, the node order of the virtual fixture must match the node order of the real fixture. You can modify the node order of most fixtures using the **Set Node Order** dialog as follows:

1. Select the fixture to modify.
2. Select **Set Node Order...** from the **Fixture** or context menu. The **Set Node Order** dialog opens.



3. In the top row, click the icon with the green dot in the position of node 1.
4. In the bottom row, click the icon with the matching node order.

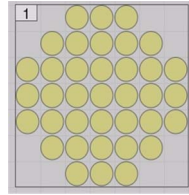
Verifying Node Order

When working online, you can verify correct node order as follows:

1. Associate the fixture with its power supply port.
2. Select the **Sel. Node** tool.

3. Drag the mouse diagonally over the virtual fixture. If the node order is correct, the nodes on the real fixture light up to follow the mouse.

Creating Irregular Fixtures (Adding and Deleting Nodes)



Irregular fixtures can be created using the **Add Nodes** and **Delete Nodes** tools. For example, to create the fixture shown above, you could create a 5 x 5 node fixture and add 3 nodes to each side, or create a 7 x 7 node fixture and delete 3 nodes from each corner.

To add nodes:

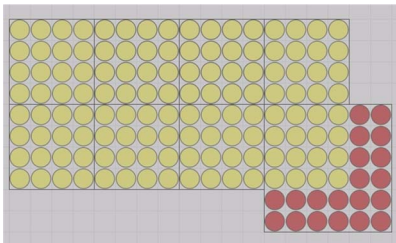
1. Select the fixture to modify.
2. Select **Add Nodes** from the toolbar or **Tool** menu.
3. Click in a grid cell to add a single node, or drag the mouse to add multiple nodes.
4. When all nodes have been added, select a different tool before clicking again in the map window.

The procedure for deleting nodes is similar.

Tip: With some irregular fixtures, it may be necessary to modify the node order manually: use the **Move Nodes** tool to reorder the nodes.

Masking Nodes

Nodes can be masked (set to display black output) to prevent them from displaying video. Masked nodes are displayed in red.



To mask nodes:

1. Select **Sel. Nodes** tool.
2. Select the nodes to mask.
3. Select **Mask Selected Nodes** from the **Edit** menu.

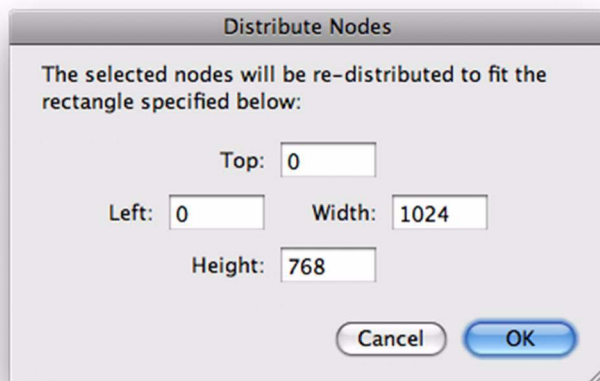
To unmask nodes, use **Unmask Selected Nodes**.

Distributing Nodes

The **Distribute Nodes** command spreads selected nodes evenly over a designated rectangle. It provides an easy way to distribute nodes to fit a video frame. Perform this step after placing all fixtures on the map.

To distribute nodes:

1. Select the fixtures to distribute. (To select all fixtures, use **Select All** in the **Edit** menu.)
2. Select **Distribute Nodes...** from the **Edit** menu. The **Distribute Nodes** dialog opens.



3. Enter the Y-value of the rectangle's top-left corner in the **Top** field; enter the X-value in the **Left** field.
4. Enter the rectangle's width and height and click **OK**.

Tip: Use a resolution guide or a background image with the desired frame size and the coordinates displayed on the status line to find the top-left corner.

Grouping and Ungrouping Fixtures

Multiple fixtures can be merged into groups, which makes it easier to copy and move several fixtures at once.

To create a group, select the fixtures and then select **Group** from the **Edit** menu. To ungroup fixtures, select **Ungroup** from the **Edit** menu.

Using Groups as Templates

When a lighting system has many identical fixtures that are laid out and connected in a repeating pattern, you can save time by grouping and cloning fixtures associated with a power supply.

To create a group for cloning:

1. Place virtual fixtures on the map to match the real fixtures connected to a power supply.
2. Associate the fixtures with a real or placeholder supply as described in later chapters.
3. Group the fixtures.

To clone and associate a group:

1. Select the **Clone** tool.

2. Create a clone of the group and position it on the map.
3. Select the group's power supply and select the **Associate** tool.
4. Click anywhere in the group to associate all fixtures.

Working with Overlapped Fixtures

Two or more real fixtures can be mapped to display the same image by placing their virtual fixtures on the same grid cells.

When fixtures overlap, clicking anywhere they overlap selects the top fixture. To select a lower fixture, you can either

–Use [Alt]-click to cycle through the stack of fixtures; or

–Select **Move to Back** from the **Edit** menu or context menu to move the fixture to the bottom of the stack.

You can select a lower fixture if any of its nodes are visible. Selecting **Move to Front** from the **Edit** or context menus moves the selected fixture to the top of the stack.

Working with Layers

About Layers

The fixture map can be divided into multiple layers that can be displayed or hidden as desired. This makes it easier to map fixtures that are stacked on top of each other.

The Main layer is the layer on which fixtures are placed when added to the map. From there, they can be moved to another layer. When pasting, duplicating, and cloning fixtures, new fixtures remain on the same layer.

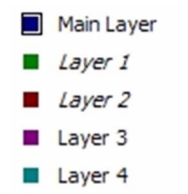
Set Fixture Layer

To move fixtures and groups to a different layer:

1. Select the fixtures to move.
2. Select **Set Layer** from the **Fixture** menu. The layer selection list opens with the fixtures' current layer indicated by a check mark (Mac) or box (PC). (Italic text indicates hidden layers.)



Mac version



PC version

3. Select the destination layer from the layer list.

Show / Hide Layers

Visible layers are indicated in the layer list by a box (PC) or check mark (Mac).

To show or hide layers:

1. Select **Layers** from the **View** menu. The layer selection list opens.
2. Click a layer to toggle its display status.

To hide all layers but one:

1. Press and hold the Alt key and then open the **View** menu.
2. Select **Layers** from the **View** menu. The layer selection list opens.
3. Click the one layer to display. The other layers disappear.

Tip: Clicking **Show All Layers** with the Alt key depressed hides all layers.

Layer Management

In the **Manage Layers** dialog, you can

- Add and delete layers;
- Double-click layer labels to edit them;
- Double-click color fields to select a different color.

To open the **Manage Layers** dialog, select **Layers / Manage Layers...** from the **View** menu.

Chapter 7

Working with Real Supplies

Overview

About Power / Data Supplies and Data Enablers

A power supply, also referred to as a Power / Data Supply or PDS, is a device that provides power to low-voltage LED fixtures and connects them to the lighting network.

Some fixtures have built-in, onboard power processing capabilities. Fixtures with onboard power processing are paired with Data Enablers.

The map must link all fixtures to their power supplies or Data Enablers. The links are established by *associating* virtual fixtures with the power supply or Data Enabler ports to which the real fixtures are connected.

This chapter describes how to work with real supplies and Data Enablers; placeholder supplies, which you use in place of real supplies when you cannot connect to the lighting network, are described in the next chapter.

Terms Used to Describe Supplies

When describing power supplies, the following terms are used.

- A *connected* supply refers to a real supply that is connected to the lighting network and detected by VMT. It appears in regular text in the power supply list.
- An *unconnected* supply refers to any supply, real or placeholder, that is associated with fixtures on the map, but is not detected by VMT because either the power supply or the VMT computer is not connected to the lighting network. An unconnected supply appears in italic text in the power supply list.
- A *placeholder* supply refers to a supply created in VMT to stand in for a real supply. A placeholder supply is always unconnected and appears in the power supply list in italic text.
- An *associated* supply refers to a real or placeholder supply that is associated with one or more fixtures.
- An *unassociated* supply refers to a real or placeholder supply that has no fixtures associated.


Suggested Work Flow

The basic sequence for creating a map when connected to the lighting system network and working with real power supplies is as follows:

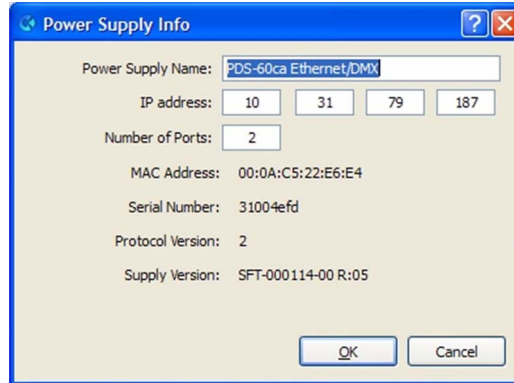
1. Scroll through the list of power supplies and watch the fixtures light up until you find the supply for the fixtures in the top-left corner. (If nothing happens, you may need to pause the VSE Pro.)
2. Click a port selection button and determine the node dimensions of the connected fixture.
3. Add a virtual fixture with the same node dimensions as the real fixture to the map. Rotate and move the virtual fixture as described in Chapter 6.
4. Associate the virtual fixture with its power supply port. See *Associating Fixtures with a Real Supply* on page 36.
5. Verify the fixture's node order and change if necessary. See *Modifying Node Order* on page 28.
6. Add and associate fixtures for the remaining ports on the power supply.
7. If the arrangement of fixtures connected to the power supply occurs repeatedly, create a group to use as a template. See *Using Groups as Templates* on page 30.
8. Repeat the process for each power supply.
9. When all fixtures are on the map, adjust the node spacing, if necessary, to fit the video frame using the **Distribute Nodes...** command in the **Edit** menu.
10. Save the completed map and transfer it to the VSE Pro. See *Transfer Map to VSE Pro* on page 42.

Detecting Real Power Supplies

VMT automatically detects real power supplies and Data Enablers when connected to the lighting network and lists them in the power supply list.

You can refresh the power supply list to reflect any changes to the installation by pressing  or selecting **Refresh List** from the **Power Supply** menu.

Power Supply Information



The **Power Supply Info** dialog, shown above, displays information for the selected supply. The power supply's name and IP address can be edited. Changing the IP address of real supplies is not recommended if you are unfamiliar with Ethernet networks.

Identifying Connected Fixtures

Determining Which Fixtures are Connected to a Power Supply

To determine which fixtures are connected to a power supply, select the supply from the power supply list. Connected fixtures light when their supply is selected. They light red if they are not associated, or yellow if they are.

Determining Port Connections


To determine how fixtures are connected to the ports of the selected power supply, click the port selection buttons. Connected fixtures light when a button is clicked. They light green if they are not associated, or yellow if they are.

Note: the first click of a port selection button triggers a node discovery routine, which may cause the fixtures to blink or flicker (this is normal).

Associating Fixtures with a Real Supply

All virtual fixtures must be associated on the map with the power supply to which the real fixtures are connected.

To associate fixtures with a real power supply:

1. If the power supply list is hidden, select **Show Power Supplies** from the **View** menu.
2. Select the **Associate** tool.
3. Select a power supply from the list.
4. Note the port number displayed by the Associate cursor .
5. Determine which real fixture is connected to that port as described above.
6. Click the virtual fixture that represents the real fixture.
7. Repeat steps 4 through 6 for the remaining fixtures connected to the power supply.

Tips

- Use the arrow or number keys to change the Associate cursor's port number.
- You can associate multiple fixtures to a port. Fixtures after the first one have a letter following the port index, for example "1b".
- To hide associated power supplies, use the **Show Unassociated Only** filter.

Chapter 8

Working with Placeholder Supplies

Overview

About Placeholder Power Supplies

You can use placeholder power supplies to stand in for real power supplies when they are not available, for example, when making a video map prior to system installation. You associate fixtures with placeholder power supplies just like real ones. Later, when connected to the lighting network, you combine the placeholder supplies with the real supplies.

To work with placeholder power supplies effectively, you will need a lighting design plan that shows how the lighting fixtures are laid out and connected to the power supplies. For suggestions on creating a lighting design plan, refer to the VSM Pro Product Guide.

Specifically, you need the following information for each fixture:

- Power supply port connection (port number)
- Location within the video display
- Orientation and node order

Ideally, you will also know the IP addresses of the real supplies, but you can give placeholder supplies temporary addresses that you can change later.

Suggested Work Flow

The basic sequence for creating a map using placeholder supplies is as follows:

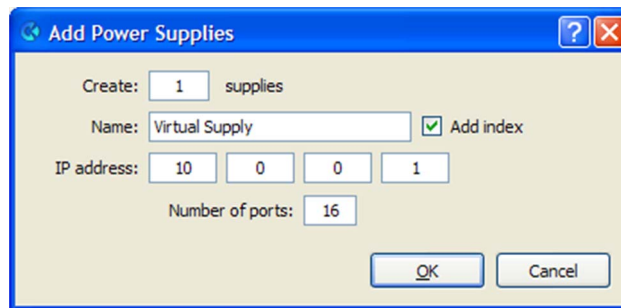
1. Working from the lighting design plan, create placeholder supplies to stand in for the system's real supplies.
2. Select one of the placeholder supplies and add its virtual fixtures to the map.
3. Move and adjust the virtual fixtures as described in Chapter 6.
4. Associate the fixtures with the placeholder supply.
5. If the arrangement of fixtures associated with the supply occurs repeatedly, create a group to use as a template and clone the group. See *Using Groups as Templates* on page 30.

6. Repeat the process for each placeholder supply.
7. When all fixtures are on the map, adjust the node spacing, if necessary, to fit the video frame using the **Distribute Nodes...** command in the **Edit** menu.
8. Save the map.
9. Later, when you have access to the lighting network, combine the placeholder and real supplies. See *Combining Placeholder and Real Supplies* on page 40.
10. Transfer the map to the VSE Pro. See *Transfer Map to VSE Pro* on page 42.

Creating Placeholder Supplies

To create placeholder supplies:

1. If the power supply list is hidden, enable **Show Power Supplies** in the **View** menu.
2. Click **Add Supply...** or select **Add New Supplies** from the **Power Supply** menu.
3. In the **Add Power Supplies** dialog, enter the number of supplies to add.



4. Enter a name to identify the supplies. If you want a running number appended to the name when adding multiple supplies, enable the **Add index** option.
5. Enter the IP address. If adding multiple supplies, enter the IP address to start with; the IP address of subsequent power supplies increments automatically.
6. Enter the number of output ports on the supply.
7. Click **OK**.


Tips

- Enter the IP address of the matching real supply whenever possible. If you do not know the IP address, use the one suggested as a temporary IP address, and give the placeholder power supply a descriptive name that will help you match it to the real supply.
- A placeholder supply's name, IP address, and number of ports can be modified in the **Power Supply Info** dialog. Select the supply and click the **Get Info...** button to open the dialog.

Associating Fixtures with a Placeholder Supply

All fixtures must be associated with a supply port. You can associate multiple fixtures to a port. Fixtures after the first one have a letter following the port index, for example “1b”.

To associate fixtures with a placeholder power supply:

1. If the power supply list is hidden, select **Show Power Supplies** from the **View** menu.
2. Select the **Associate** tool.
3. Select a power supply from the list and note the number displayed by the cursor . You can use the arrow or number keys to change the cursor's port number.
4. Click the placeholder fixture to associate with the port designated by the cursor number.
5. Repeat step 4 for the remaining fixtures connected to the power supply.

Combining Placeholder and Real Supplies

Overview

You merge the placeholder supplies with real ones when you can connect the VMT computer to the lighting network.

The process for combining supplies depends on whether the placeholder supplies were given a real or temporary IP address when they were created. Each case is described below.

Combining Placeholder Supplies that Have Real IP Addresses

When placeholder supplies have IP addresses that match the IP addresses of real supplies on the lighting network, VMT combines the placeholder and real supplies when it connects to the network.

If the names of placeholder and real supplies differ, you must choose which name to use. The **Power Supply Name Conflict** dialog gives you three options:

- **Leave both names as they are:** The supplies are combined but their names remain unchanged.
- **Keep power supply name (overwrite map name):** The combined supply is identified by the real supply's name.
- **Keep map name (overwrite power supply name):** The combined supply is identified by the placeholder supply's name.

Combining Placeholder Supplies that Have Temporary IP Addresses

To combine a placeholder supply with a real supply when the IP addresses do not match:

1. Locate the real supply to combine with and note its IP address. (The real supply must not be associated with any fixtures.)
2. Click the placeholder supply and then click **Get Info**.
3. Enter the real IP address and click **OK**. Click **YES** at the verification prompt.

Chapter 9

Working with the VSE Pro

Overview

VMT provides access to the VSE Pro so you can perform the following tasks when connected to the lighting network:

- View connection status
- Transfer a map to the VSE Pro
- Get a map from the VSE Pro
- Pause video output, which is required to access power supplies
- Capture a video snapshot to use as the map background
- Preview the video display
- Open the VSE Pro user interface to perform additional tasks

View Connection Status

The status of the connection to the VSE Pro is displayed on the top line of the **VSE** menu.

If you connected the computer to the lighting network after opening VMT and the status message is “Not Connected”, close and restart the application. If that doesn’t work, change your network preferences, as described in Chapter 3.

Transfer Map to VSE Pro

The map of the lighting system must be transferred to the VSE Pro.

To transfer a map to the VSE Pro:

1. Open the map file to transfer.
2. Open the **VSE** menu and confirm that the VSE Pro is connected.
3. Click **Transfer Map to VSE**.

Get Map from VSE Pro

The VSE Pro's map can be transferred to VMT for modification, backup, etc.

To fetch a map from the VSE Pro:

1. Save your work if you have a map open.
2. Open the **VSE** menu and confirm that the VSE Pro is connected.
3. Select **Fetch Map from VSE**. The map opens in the VMT map window.

Pause Video Output

VMT cannot control lighting fixtures while there is output from the VSE Pro. To toggle output on or off, select **Pause VSE** from the **VSE** menu. Output is paused by default when VMT starts up.

Capture Image

You can grab a video snapshot from the VSE Pro to use as the background in the map window.

To grab a snapshot, select **Capture Image from VSE** from the **VSE** menu.

Preview the Video Display

You can preview the video display and test the map by sending a background image to the lights.

To send a background image to the lights, capture an image or load one as described under *Background Image* on page 14, and then select **Send Background Image to Lights** from the **View** menu.

Open VSE Pro Interface

The VSE Pro has a Web-style interface that allows you to perform additional tasks using your web browser; see the *Video System Manager Pro User Guide* for details.

To open the VSE Pro browser interface, select **VSE Website** from the **VSE** menu.

Chapter 10

Advanced Functions

Combining Maps

You may find it easier at times to create partial maps and combine them later into a single map. This can be done using the **Append Map** command in the **File** menu.

To combine two or more maps:

1. Open the map file that you want to add to, or start with a new map.
2. Select **Append Map...** from the **File** menu.
3. Select the map file that you want to combine with the open map and click **Open**.
4. Repeat steps 2 and 3 for each additional map to append.
5. Save the combined map. Use the **Save Map As...** command if you do not want to lose the partial map that you started with.

Tips

- The combined map will have one set of layers for each partial map. You may want to use descriptive layer names and delete unused layers before appending.
- The **Undo** command will NOT roll back an append operation. Save your work as you go so you can discard changes if you accidentally append the wrong map.

Exporting Maps

You can export a map to a CSV (comma-separated values) file suitable for use in spreadsheet applications. For every node on the map, the exported file contains an IP address, port number, DMX address, grid coordinates, mask state, and KiNET™ version. The KiNET version is for applications that need to differentiate between types of power supplies.

IP	Port	DMX Address	X	Y	Masked	Kinet Version
10.0.1.133	1	0	855	312	0	2
10.0.1.133	1	3	855	313	0	2
10.0.1.133	1	6	855	314	0	2
10.0.1.133	1	9	855	315	0	2
10.0.1.133	1	12	855	316	0	2
10.0.1.133	1	15	855	317	0	2
10.0.1.133	1	18	855	318	0	2
10.0.1.133	1	21	855	319	0	2
10.0.1.133	1	24	855	320	0	2
10.0.1.133	1	27	855	321	0	2
10.0.1.133	1	30	855	322	0	2
10.0.1.133	1	33	855	323	0	2
10.0.1.133	1	36	855	324	0	2
10.0.1.133	1	39	855	325	0	2

Manual Network Configuration

If the computer’s network adapter fails to connect automatically to the lighting network, the network settings may need to be configured manually.

Be sure to record any settings that you change. If your computer is connected to a local area network, the original settings will need to be restored when reconnecting to that network. Please consult with your network administrator if you need to make any changes to firewall settings.

Windows®

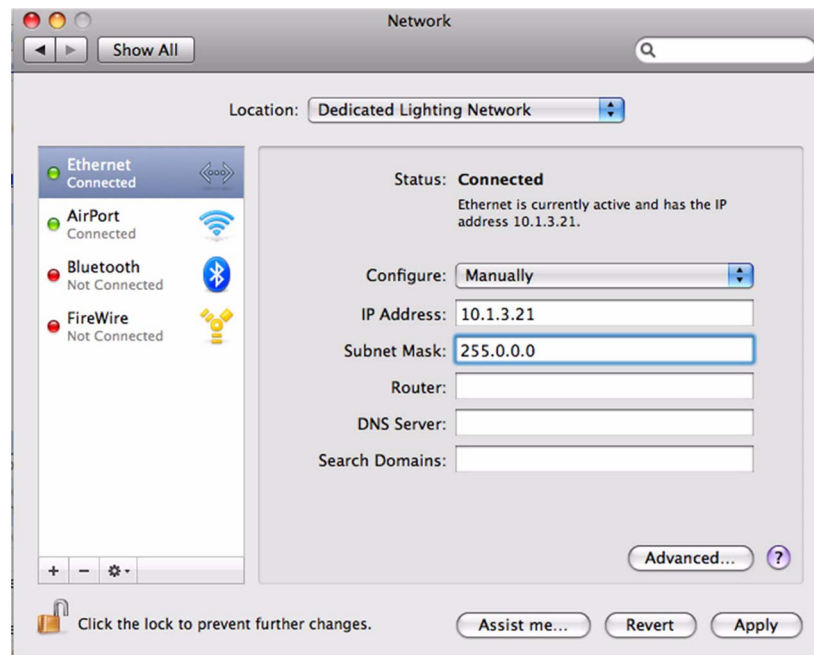
To set the IP address manually:

1. Open **Network Connections**: click **Start**, click **Control Panel**, and then double-click **Network Connections**.
2. Right-click the local area connection for the lighting network and select **Properties** from the context menu.
3. On the **General** tab, select **Internet Protocol (TCP/IP)** from the list of items used. Note: click the label, not in the check box.
4. Click **Properties**. Select **Use the following IP address**. Record the settings in each field for later use.
5. In the **IP address** field, enter 10.1.3.21; in the **Subnet mask** field, enter 255.0.0.0.
6. Ignore the **Default gateway** field. Click **OK**.

Close the **Local Area Connection Properties** dialog.

Mac OS X Network Configuration

1. Select **System Preferences** from the Apple menu. Click **Network**.
2. Select **Edit Locations** from the **Location** list and click **Add (+)**.
3. Enter a name for the network and click **Done**.
4. Click **Ethernet** in the device list.
5. Select **Manually** from the **Configure** list.
6. In the **IP address** field, enter 10.1.3.21; in the **Subnet mask** field, enter 255.0.0.0.



7. Click **Apply**.

Chapter 11

Tutorials

Tutorial 1: Building a Virtual Video Map

Overview

This tutorial covers building a virtual video map for an installation using two power supplies and two iColor® Tile FX fixtures. A virtual video map can be created offsite, prior to an installation, without connecting to any lighting system components.


- Each iColor Tile FX module in this example has 6 rows and 6 columns of nodes for a total of 36 nodes per tile.
- The power supplies for the virtual video map both have two output ports. One port on each power supply will connect to a fixture.

Step One: Adding Placeholder Power Supplies

When you launch VMT, the main window appears showing an empty map grid and a list of power supplies. Select **Add Supply...** to start creating power supplies. The Add Power Supplies dialog lets you specify how many supplies to create and what their settings are. For this example, create two placeholder supplies, each with two ports. When you click **OK**, you should see two supplies appear in the list.

Step Two: Creating the First Fixture

To start creating the tiles, create a fixture with 36 nodes:

-  Click **Add Fixture** at the top of the main window. A dialog will appear asking for the dimensions of your fixture. Enter 6 for the Node Width and 6 for the Node Height (leave the Space Between Nodes as 0.) Click **OK** and the first fixture will appear on the map, in the top left corner.

Step Three: Creating Additional Fixtures

There are several ways to add more fixtures to the map. This step covers the *clone tool*. The clone tool offers a quick way to click and drag copies of fixtures on your map:



Select the clone tool, then click on the fixture created in the previous step while holding the mouse button. Drag horizontally across the map to create one copy of the fixture, then release the mouse button.

Step Four: Associating Fixtures to Power Supplies

The next step is to *associate* the fixtures to ports on the power supplies:

Select the first power supply you created by clicking on its name in the power supply list. The name is probably Power Supply 1.



Select the *associate tool* — the cursor should change to a “1”, indicating that you're going to associate fixtures to output port 1 of the selected power supply:

Click on the first fixture. It will turn yellow, indicating that it is associated, and a badge will appear in its top left corner showing its port number.

Select the second power supply, and follow the same steps.

You've associated each fixture a port on a power supply. You can save your map.

Tutorial 2: Interactively Mapping a Lighting Installation

This tutorial covers how to map a live installation while connected to the lighting network.

For simplicity, we will assume for that you have connected to a network that contains the same installation described in the first tutorial: two power supplies, each with two output ports. The first output port on each supply is connected to a 36-node Tile fixture.

Step One: Examining Power Supplies

When you launch VMT while connected to a lighting network, the main window shows an empty map grid and a list of any power supplies or data enablers that are connected to the network. Note that on a live network, you will see both power supplies listed by name and IP address. If you click on a power supply in the list, all of the fixtures attached to that supply will light up red.

Below the list of supplies is a group of buttons that connect directly to each port of the selected power supply. If you click on one of the port buttons, the nodes of any connected fixture will light up green.

There is also text below the port buttons indicating how many nodes were detected for a particular port. For the Tile that is connected to the selected port, the number is 36.

Using this interactive method of discovery, you can identify which nodes on which fixtures are connected to the ports of your power supplies. This information will help you create a map.

Step Two: Creating A Fixture

In this example, each port is connected to a 6 x 6 Tile module of nodes:



Create a fixture by clicking **Add Fixture** at the top of the main window, then enter dimensions of 6x6.

Step Three: Associating

Before creating the other fixture, associate the newly created fixture to a a port:

Select the power supply that you want to connect to the fixture you just created.



Select the associate tool — the cursor should change to a “1”, indicating that you're going to associate fixtures to the first output of the selected power supply.

Click on the fixture — it will turn yellow to indicate that it's associated, and a badge will appear in its top left corner showing its port number.

Step Four: Examining Node Order

While we know that we've connected a fixture with the right shape (6x6) and number of nodes (36), we don't know if the node order is correct. Because every node on the map will be matched exactly with a particular pixel of the video source, it is essential that the node ordering is correct.



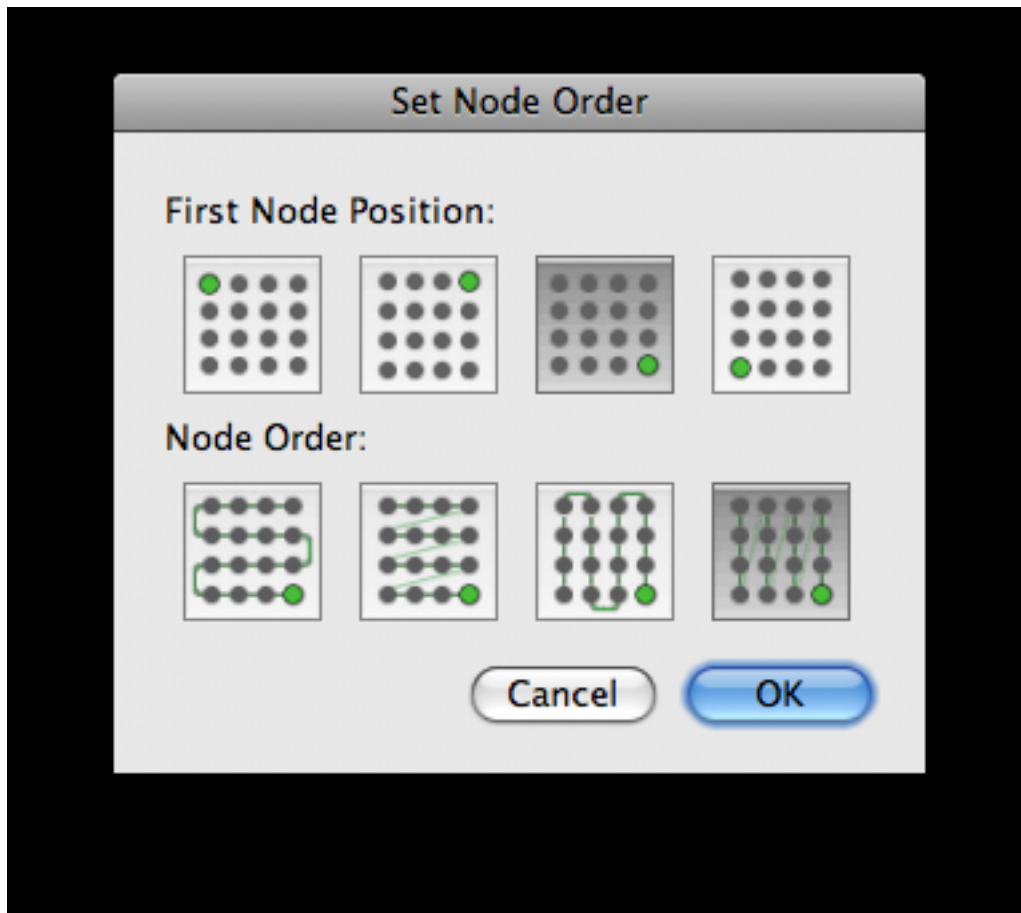
Switch to the *select nodes tool*. Now you can click-and-drag across your fixture to select specific nodes. This allows you to compare the node indexes on the map with the locations of the nodes on the connected tile. For example, if you select the top-left node on your map (#1), the top-left node on your tile should light up.

If the node order is set correctly, each node's position on the map should correspond exactly with the node position on the tile.

Step Five: Changing Node Order

If the nodes are not in the correct order there are a number of ways to make corrections. For this example, let's say your tile has been installed upside-down (a common occurrence) and the nodes start in the bottom-right corner, proceeding up the tile, instead of vice-versa.

The simplest solution is to use the *select tool* and select the fixture on the map and then select *set node order...* from the **Fixture** menu. The node layout for most fixtures follows a predictable pattern, and this dialog gives you the ability to match the fixture to any common pattern. For example, to start in the bottom-right corner and proceed up, the dialog should look like this:



A second technique is to use the **Transform** menu options to rotate and flip the fixture until the nodes are arranged correctly.

The third technique, which is often useful with various kinds string fixtures, is to use the *move nodes tool* to manually arrange the nodes to match your installation.

Step Six: Adding the Second Tile

Use the clone tool to create your second Tile:

Select the first tile, then select Clone from the menu bar.

Now select the second power supply from the power supply list so that you can associate it with the the fixture.

Click on the fixture to associate it.

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