



# MOSAIC CONTROL DISPLAYS

DA-06849-001\_v02 | May 2013

**Application Note**



# DOCUMENT CHANGE HISTORY

DA-06849-001\_v02

Version	Date	Authors	Description of Change
01	May 1, 2013	AP, SM	Initial Release
02	May 3, 2013	AP, SM	Minor edits to the "Multi-GPU Mosaic" section

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# OVERVIEW

A control display is added to an NVIDIA® Mosaic technology system to provide an additional display for managing or controlling applications on the main display surface. In general you configure the control display to be the Windows Primary and then configure applications to run on the Mosaic.

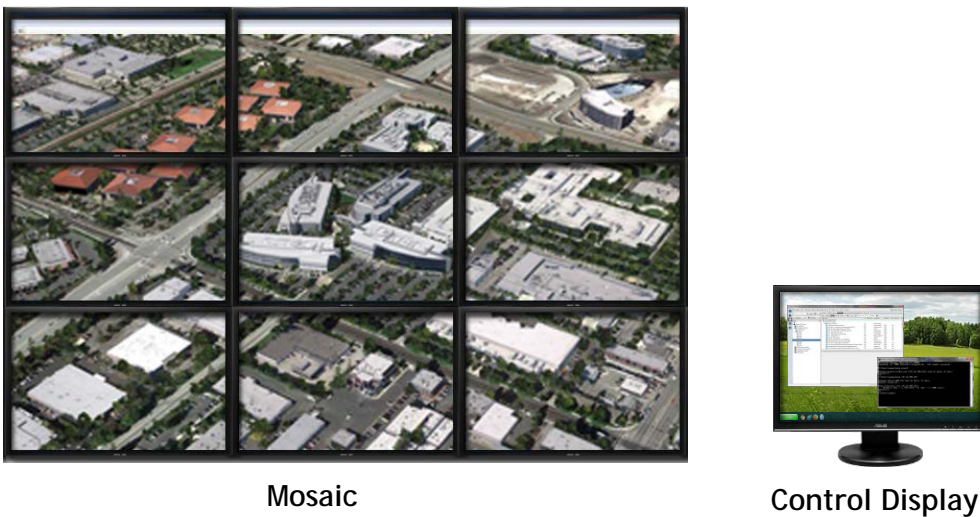


Figure 1. Mosaic and Control Display

When running the Control Display from an additional graphics processing unit (GPU), you can configure the system to boot on the control display by placing the board in the correct PCI slot, or selecting the control GPU as the boot option in the system's SBIOS.

# CONTROL GPU SELECTION

## SINGLE GPU MOSAIC

For a single GPU Mosaic (display driver R319 + higher) connect one of the ports on the card to the control display. For example, on a NVIDIA Quadro® K5000 which has 4 ports you can drive a 3 display Mosaic with a control display.

This feature only works on the NVIDIA® Kepler™ family of Quadro® GPUs.

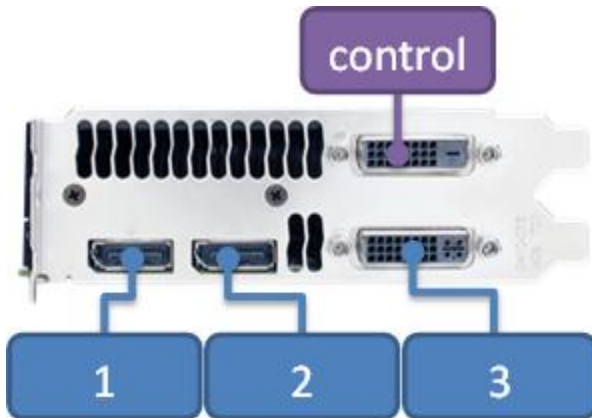


Figure 2. Control Display with 3 Display Mosaic on Quadro K5000

## MULTI-GPU MOSAIC

When using multi-GPU Mosaic the control display must be connected to a GPU which is not part of the MOSAIC group. The control display GPU needs to be a Quadro from the same product generation, but does not need to match the GPUs driving the multi-GPU Mosaic. As an example, if the Mosaic GPUs are Quadro K5000's the Quadro K600 would be a recommended control GPU. If the Mosaic GPU's are Quadro 6000's a Quadro 600 would be the recommended control GPU.

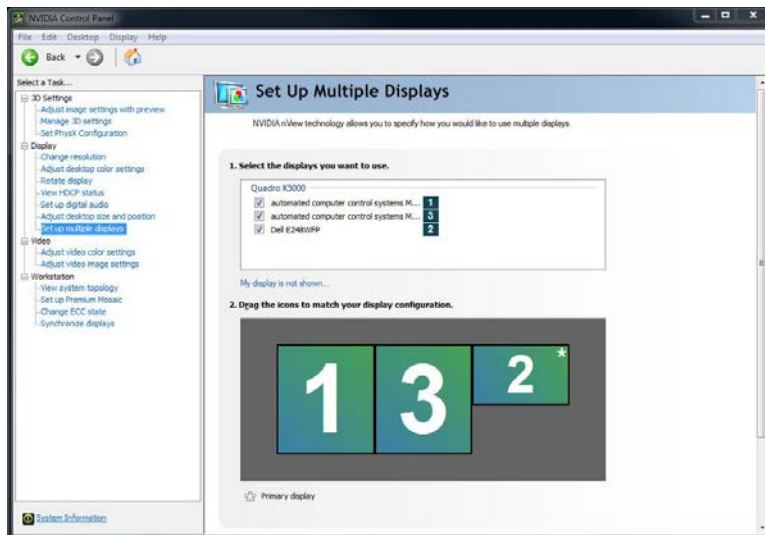


**CAUTION:** Control GPUs must be Quadro GPUs of the same generation as the Mosaic GPUs. See: the "Mosaic and Control GPU Selection" Section for more information. NVIDIA® NVS™ or NVIDIA® GeForce® GPUs cannot be used as control GPUs.

# CONFIGURING THE CONTROL DISPLAY

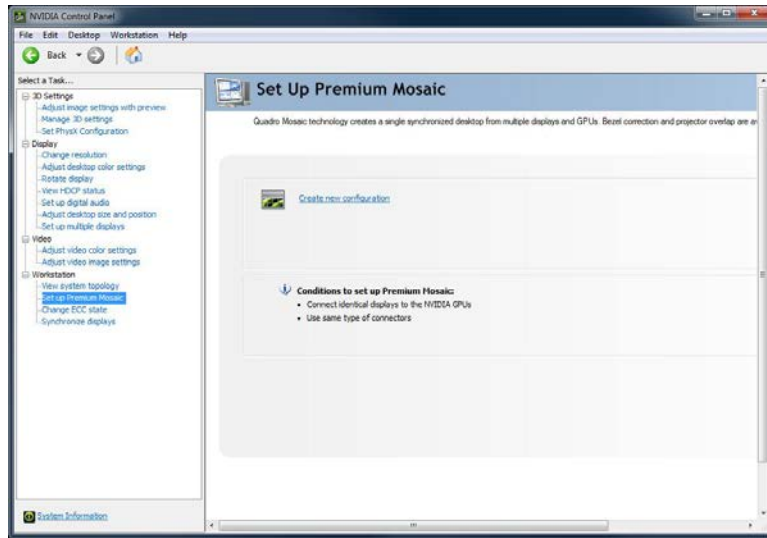
The control display is configured much like any other display in the system, although it must be enabled after creating the Mosaic.

1. Verify all displays are connected and visible from the **Set Up Multiple Displays** section of the **NVIDIA Control Panel**.

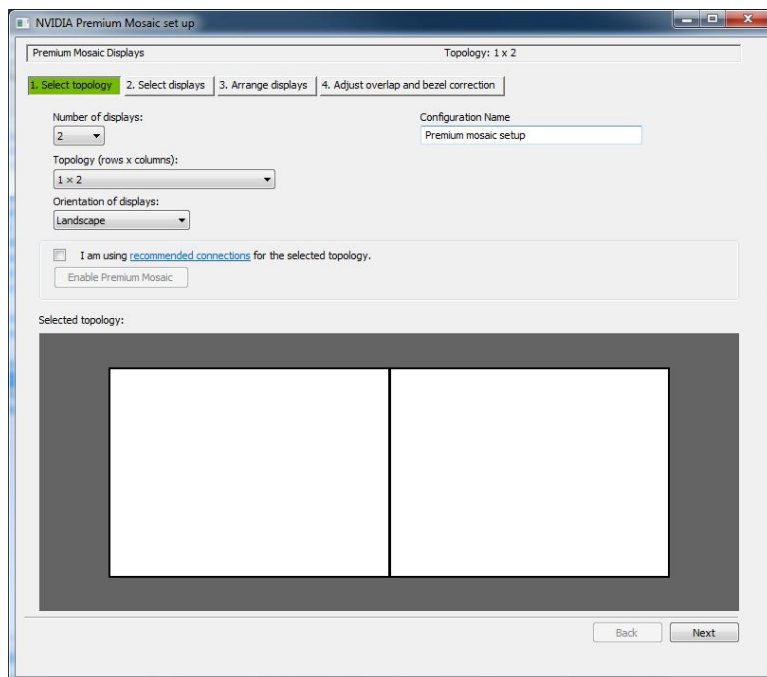




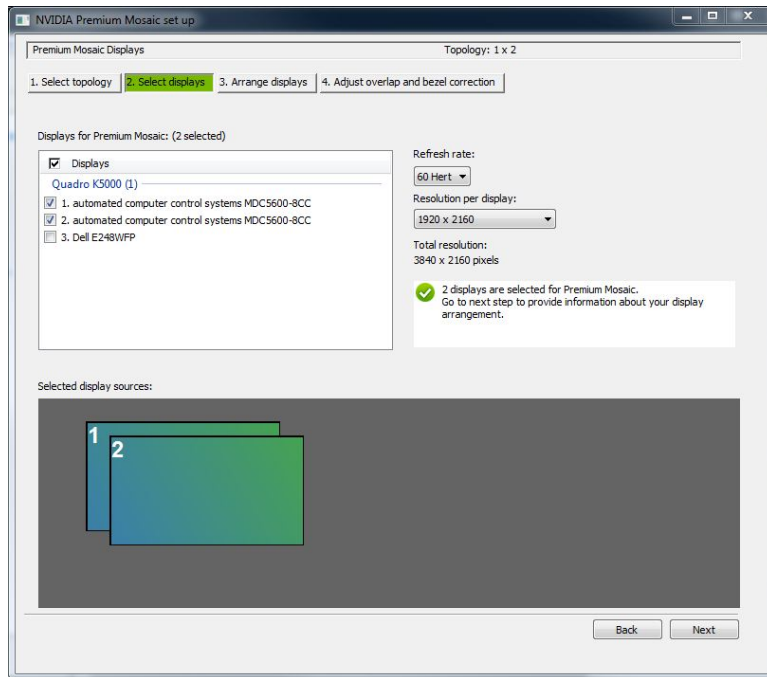
2. Configure the Mosaic. Select **Set Up Premium Mosaic and Create new configuration**.



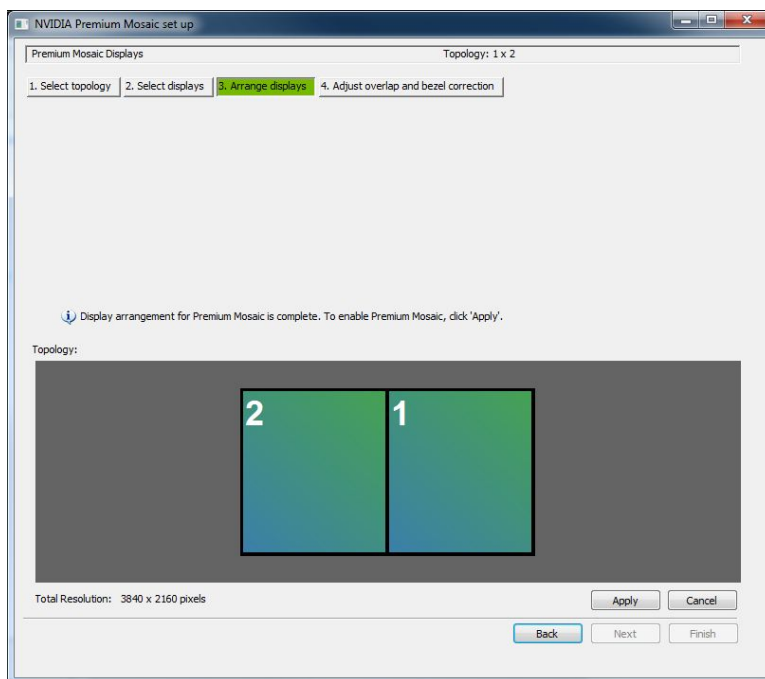
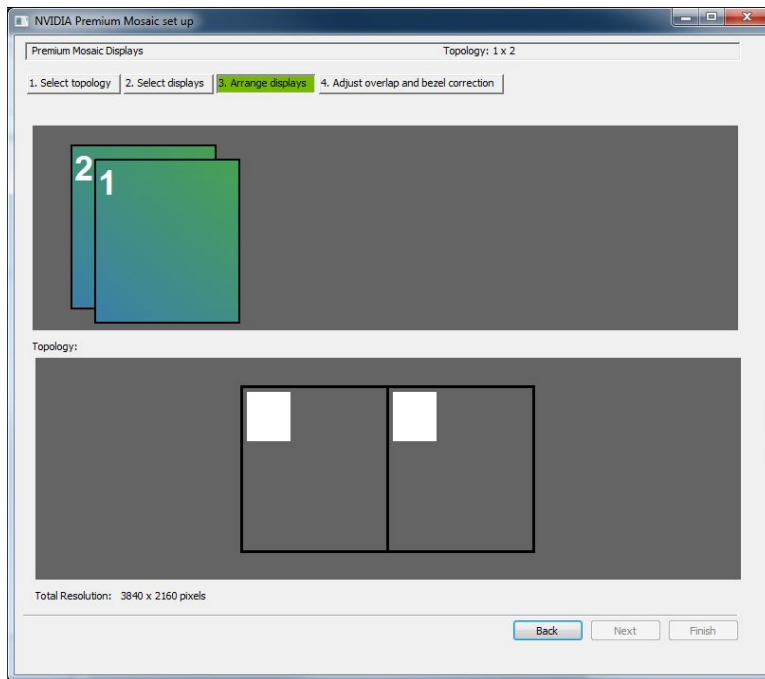
3. Select the desired Mosaic Topology, in this case 1x2.



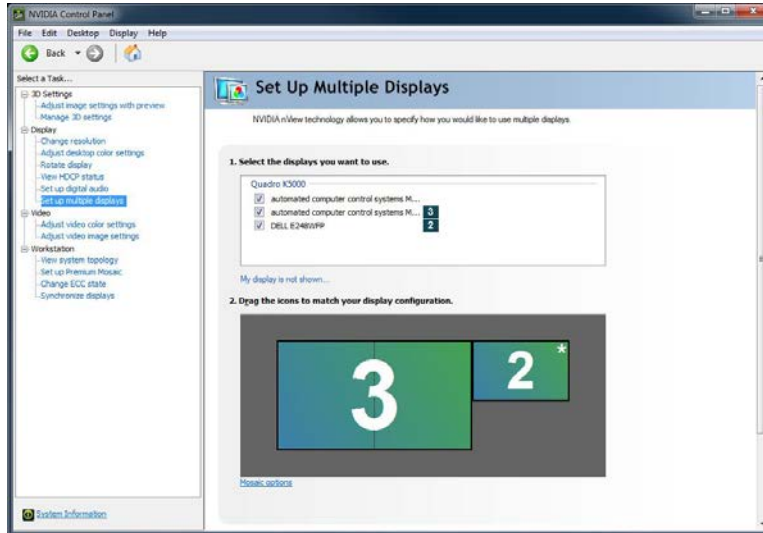
4. Select the **Displays**. Make sure not to select the control display.



5. Arrange the displays in the Mosaic either by clicking and dragging the green squares into the topology, or type the display number into the box on the topology. Choose **Apply** and finish the set up wizard.



6. Enable the **Control Display** in the **Set Up Multiple Displays** section of the **NVIDIA Control Panel** or with the **Windows Display Control Panel**. Normally, the control panel should be selected as the Windows primary by right clicking the display identifier and selecting **Make Primary**.



# MOSAIC AND CONTROL GPU SELECTION

The Control GPU and Mosaic GPU need to both be from the same GPU family. You can select any GPU in the family to be the control, but it is recommended that the control GPU have a lower model number from the Mosaic. Table 1 maps the recommended control GPU to the GPU running the Mosaic.

Table 1. GPUs by Family

GPU's by Family	Recommended Control GPU
<b>Kepler</b>	
Quadro K5000 Quadro K4000 Quadro K2000 and Quadro K2000D Quadro K600	Quadro K600
<b>Fermi</b>	
Quadro Plex 7000 Quadro 6000 Quadro 5000 Quadro 4000 Quadro 2000 and Quadro 2000D Quadro 600	Quadro 600

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