IGCC Combined Desktop Mode:

User Guide

Supporting all 10th+ Generation Core™ Processor Graphics

Revision 1.1

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Legal Disclaimer

Contents

Figures

1   Introduction

This chapter provides an introduction to the new Microsoft* Universal Windows Driver (UWD) Intel® Graphics Command Center (IGCC) Microsoft* Store Application's "Combined Desktop" display mode. The Combined Desktop display mode allows users to combine multiple monitors to create a single unified desktop user interface with a bigger viewing area and resolution for a single image. Users of this mode can view higher quality images with multiple low resolution supported panels when seen from a distance. This is a cost effective method for viewing images and combining work spaces when compared to purchasing a single high resolution panel.

The IGCC multi-monitor Combined Desktop display mode has commercial applications in the fields of digital signage, financial, stock market, medical, transportation, call center & surveillance among others. Beginning with the 10th Generation Intel® Core™ Processor Family supporting 3 to 4 display pipes, support exists via Combined Desktop Display mode (both horizontal & vertical) for up to 3 displays for Icelake core family and 4 displays for Tigerlake core family. The bezel pattern correction feature is used in conjunction with Combined Desktop display mode to view images without distortion across all monitors. Combined Desktop mode is supported on two same monitor or two different monitor of same dimension and 1 common resolution.

If a minimum of two displays are placed horizontally adjacent, it is known as Horizontal Combined Desktop display mode. This involves positioning displays one next to another where one image stretches across all panels, as shown in Figure 1. If two or more displays are placed vertically, it is known as Vertical Combined Desktop display mode. Here, the image is shared across the vertical direction, as shown in Figure 2. Bezel correction Patterns are used in both cases to make the image continuous across all displays in use.

Figure 1: Horiz. Combined Desktop Display Mode - 3 displays
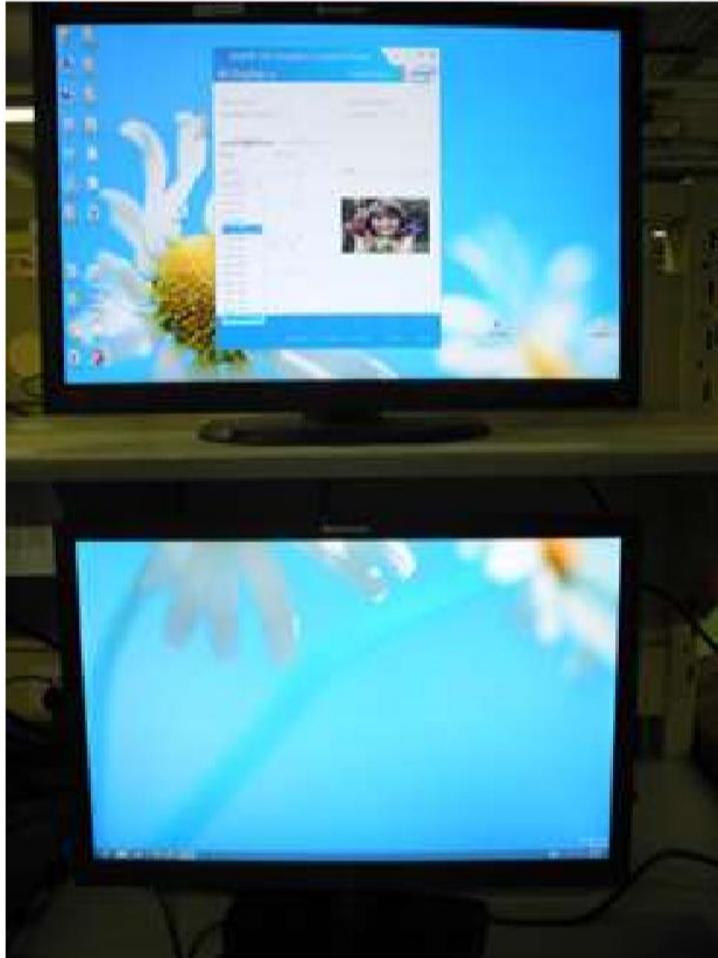
Figure 2: Vertical Combined Desktop Display Mode – 2 displays

2   Use Cases

Intel® Graphics Command Center (IGCC) Microsoft* Store Application can be launched via Start Menu, from Microsoft* Store and via Hot-Keys.

2.1   Enable "Combine Desktop" Mode with Connected Displays only

Combine desktop settings are only available when two or more external displays with the same physical dimensions and native timings are connected. When creating a Combined desktop, start by enabling Extended Desktop mode and perform the following steps to implement the "Horizontal Mode" or "Vertical Mode" Combined Desktop Use Cases:

2.1.1 "Combine Desktop" Mode

1.   Launch the IGCC application and navigate to the Display page.

   a.   In the display canvas, you will see all connected displays. You will see three dot button on each display for additional settings.

   b.   Select the monitor you would like to be part of combine desktop and click on three dots. Menu will pop up with "Combine Displays" Option. It will list all other monitors that can be part of "Combine Displays"

   c.   Select the target monitor you would like to be part of "Combine desktop"

   d.   Select "Horizontal" or "Vertical".

   e.   IGCC will Combine selected Displays. The second display selected will always be added on the right side in Horizontal or bottom in the vertical combine desktop mode.

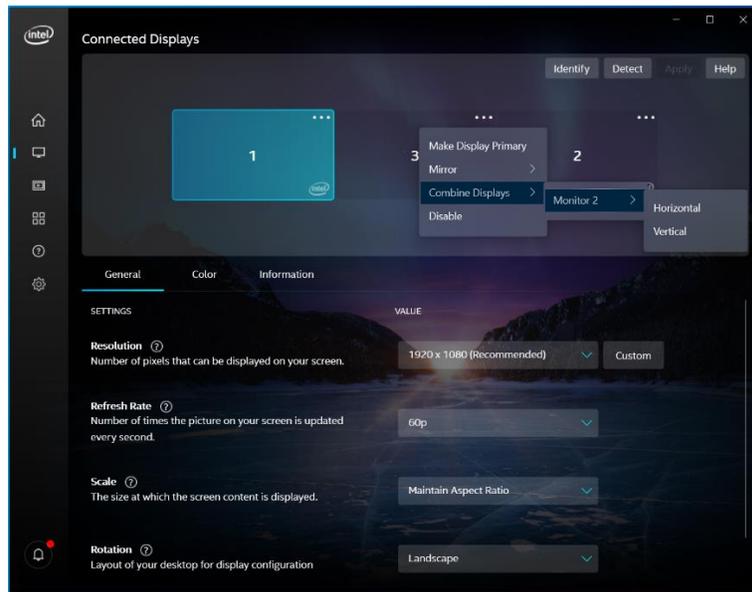   f.   Repeat steps to add additional displays to "Combine Desktop" mode.
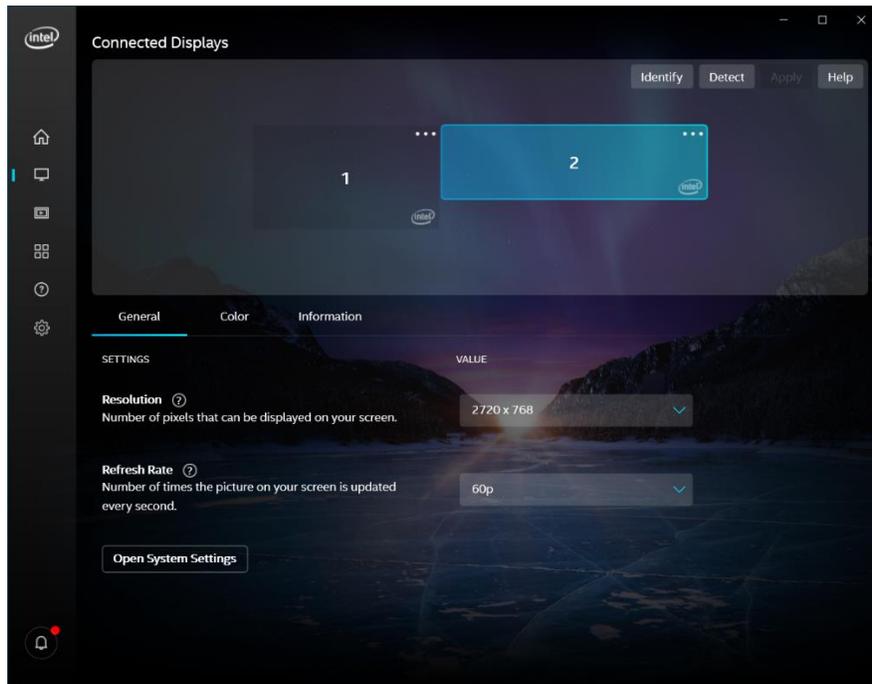
Figure 3: Collage Three Dot Menu

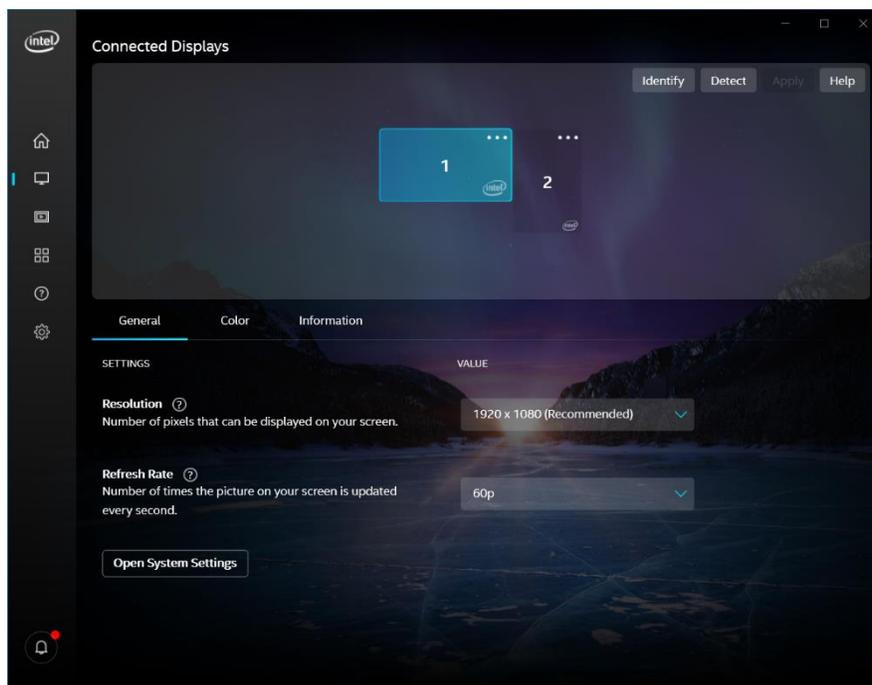**Figure 4 Combine Desktop Horizontal 2 Displays**

Figure 5 Combine Desktop Vertical 2 Displays

2.1.2 "Combine Desktop" Behavior

1. Since the implementation of Combine Desktop is to introduce a new monitor to system with combined desktop mode, by default windows will add new combined desktop monitor in cloned display mode. You can click on three dot menu and extend combined desktop monitor out of other monitor.
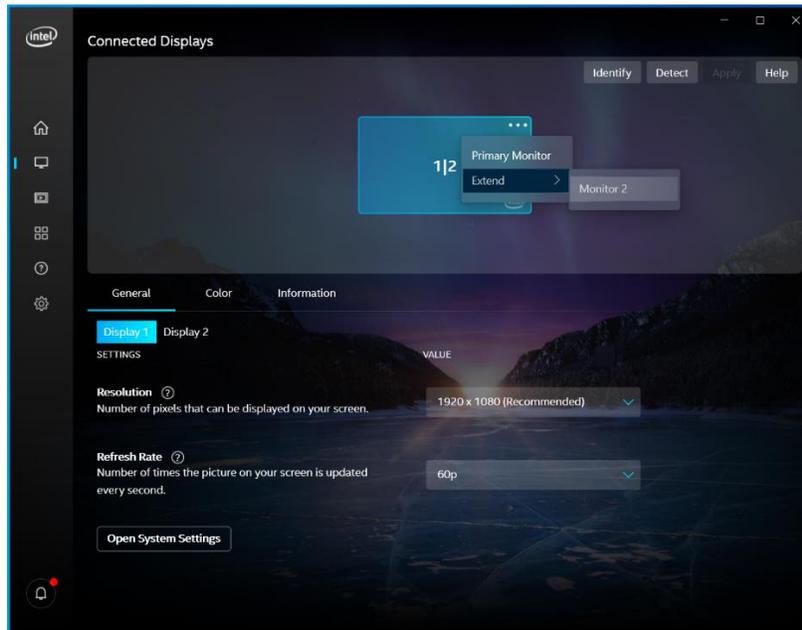

Figure 6 Combined Desktop Initial Enable (Horizontal).

2. Combine desktop's will limit displays to only change resolution or Refresh rate.

3. Combine desktop will not select highest mode by default. The mode is set by driver.

4. Combine desktop monitor will limit the number of resolutions to only resolutions that can keep the combine desktop.

5. Combine desktop can't mix and match Horizontal/Vertical desktop.

6. Internal display can't be part of combined desktop.

7. Internal display can stay enabled during combined desktop.

8. While in combine desktop, Color settings will apply to all monitors in combine desktop mode.

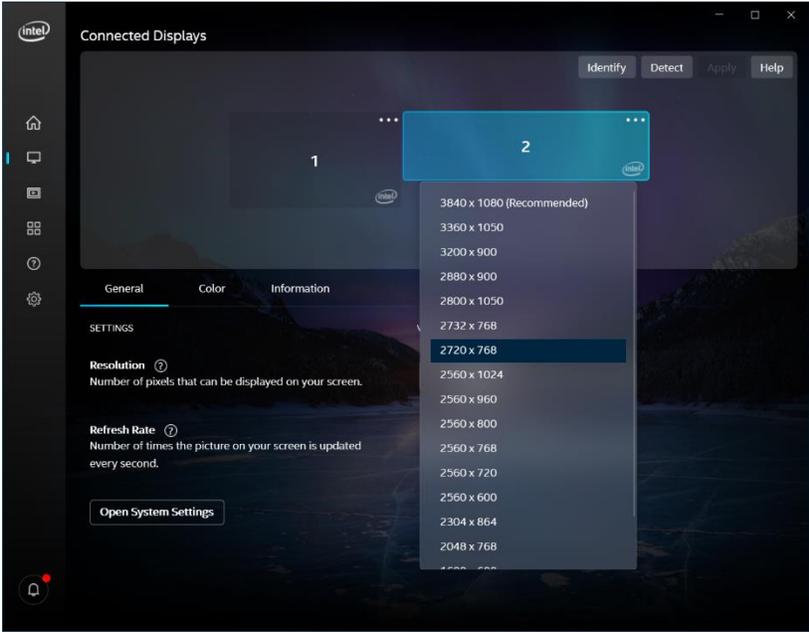9. Information tag will not show any details when in combine desktop mode.
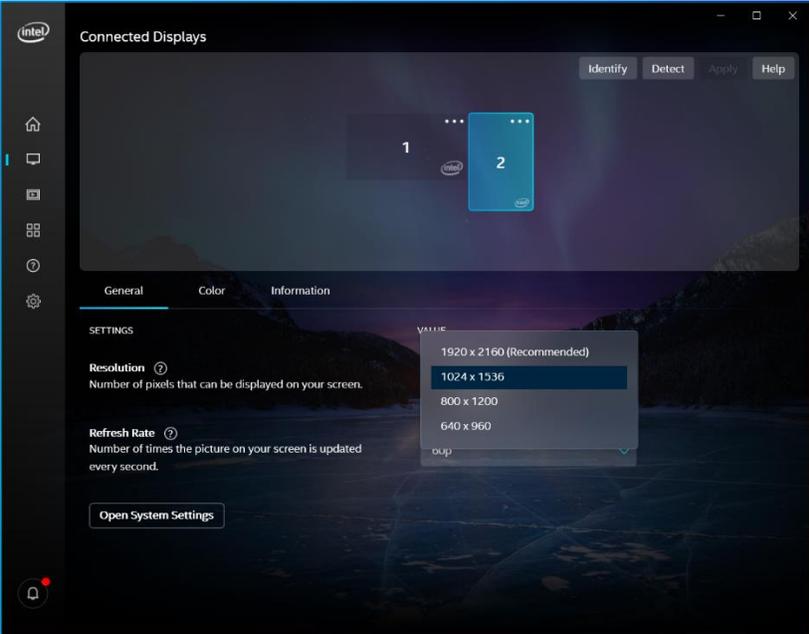
Figure 7 Horizontal Combine Desktop Mode List

Figure 8 Vertical Combine Desktop Mode List

2.2 Disable "Combine Desktop"

1. Launch the IGCC application and navigate to the Display page.
2. Connected Displays canvas should show the topology.
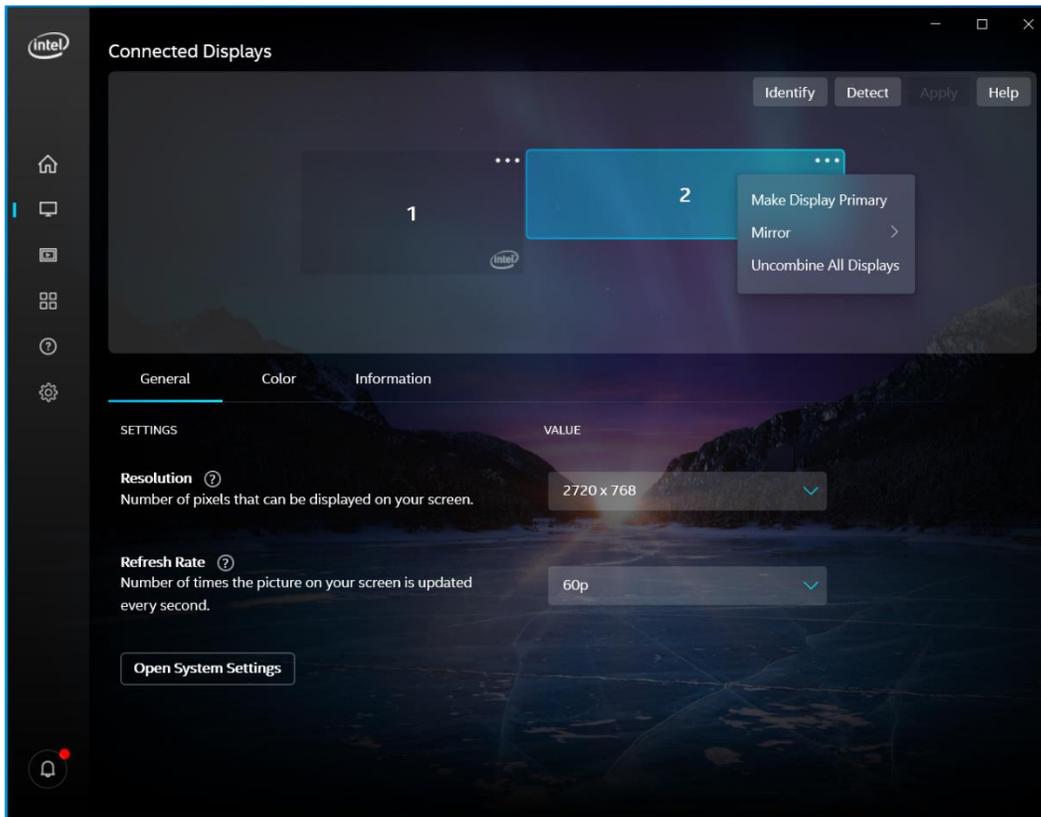3. Click three dots on "Combined Monitor", Select "Uncombine All Displays".

Figure 9 Uncombine All Displays