

For this 3-monitor situation, the left and center monitor constitute one group, whereas the right monitor constitutes another group.

Virtual desktop systems typically allow users to group windows through one of the following two methods:

1



In this method, the desktop spans all of the monitors, and all content on all monitors thus becomes a group.

**Strength:** simplicity, cohesiveness  
**Weakness:** too-coarse grouping level

2



In this method, each monitor has a set of desktops that are switched independently of other monitors.

**Strength:** independent monitor control  
**Weakness:** too-fine grouping level

## TaskZones is our solution to the drawbacks of virtual desktops on multiple monitors

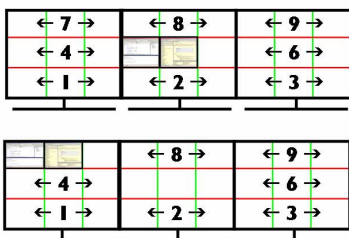
By noting that windows rarely straddle monitor boundaries [1, 2], users often desire to block specific content [3, 4], and groups of windows may span an arbitrary number of monitors, TaskZones allows users to flexibly define window groups based on windows' monitor locations.

### Example: Creating groups

To create a group, a user first selects the relevant monitors (1 and 2 in this case).



After selecting the windows, the user chooses a grid location for the group. Here, the user chooses location 7.



After the group is created, the user can optionally hide the group from view. Later, the user can retrieve the group.

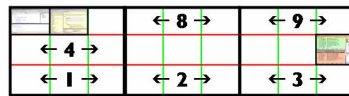


### Example: Hiding groups

Sometimes, multiple groups are visible, but one group is distracting.



After summoning the grid layout, the user can hide a visible group. Here, the user chooses location 6.



The user can now more fully concentrate on the task at hand.



### Discussion

TaskZones replaces the notion of grouping windows "in" or "on" a desktop with the notion of simply showing and hiding groups from stored locations. This allows multiple groups to be simultaneously visible as well as groups made of any number of monitors.

TaskZones also maintains the advantages of virtual desktops, namely the exploitation of spatial memory and the ability to conduct group operations quickly through keyboard shortcuts. Note that the example grid has the same layout as a keyboard keypad.

TaskZones is implemented in C# using the .NET Framework. TaskZones currently supports any monitor configuration that fits in a 3 x 3 grid but could be generalized to nearly any monitor configuration.

### References

- [1] Grudin's *Partitioning Digital Worlds*
- [2] Hutchings' et al. *Display space usage*
- [3] Ringel's *When one isn't enough*
- [4] Hutchings' and Stasko's *Revisiting Display Space Management*