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## Technical Note: Display Priority Conflict in Units with BMC and Discrete GPU

### Overview

In server and workstation platforms equipped with a **Baseboard Management Controller (BMC)**, an integrated onboard VGA controller is typically present to support remote management functions (e.g., IPMI remote console). When a discrete GPU is installed, a display priority conflict may occur between the onboard VGA and the external GPU.

### Problem Description

The BMC-integrated VGA is often initialized as the **primary display device by default**. As a result:

- Video output may continue to be routed to the onboard VGA instead of the discrete GPU.
- No display output may be observed from the GPU, especially during POST or OS boot.
- The system may appear to have a non-functional GPU, even though it is properly installed.

This behavior is platform-dependent and varies across different server/workstation designs.

## Recommended Actions

To resolve or mitigate this display conflict, the following actions can be taken:

### 1. Configure BIOS/UEFI Display Priority (Preferred)

If supported by platform firmware, set the discrete GPU as the primary display device.

- Look for settings such as:
  - *Primary Display*
  - *Init Display First*
  - *PCIe/PEG vs Onboard VGA*
- Set the priority to **PCIe** or **External GPU**

**Note:** Some units do not provide this option.

### 2. Disable Onboard VGA in BIOS/UEFI (If Available)

Certain platforms allow the onboard VGA controller to be disabled entirely.

- This forces the unit to initialize the discrete GPU for display output.
- This option may be labeled as:
  - *Onboard VGA*
  - *Internal Graphics*
  - *BMC Video*

**Note:** Availability of this feature depends on system design.

### 3. Disable Onboard VGA in Operating System (Last Resort)

If BIOS/UEFI options are unavailable, the onboard VGA device can be disabled within the operating system (e.g., **Windows Device Manager**).

- This may help avoid driver conflicts and ensure applications utilize the discrete GPU.
  - However:
    - It **does not affect pre-boot or POST display output**
    - It is **not a complete solution** for display initialization issues
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### Conclusion

Display conflicts between BMC onboard VGA and discrete GPUs are **known behavior** in some server and workstation platforms. The most effective resolution is to configure display priority at the firmware level. OS-level changes should only be used as a fallback when firmware options are not available.