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These Release Notes summarize current status, information on validated platforms, and known issues with NVIDIA GRID™ vGPU™ software and hardware on Citrix XenServer.

Included in this release is NVIDIA GRID Virtual GPU Manager versions 352.103 for Citrix XenServer 6.5 SP1, Citrix XenServer 6.2 SP1 with hotfixes XS62ESP1009 and XS62ESP1011, NVIDIA Windows drivers for vGPU version 356.60, and NVIDIA Linux drivers for vGPU version 352.103.

Note: If you install the wrong package for the version of XenServer you are using, GRID vGPU Manager will fail to load.

The GRID vGPU Manager and Windows guest VM drivers must be installed together. Older VM drivers will not function correctly with this release of GRID vGPU Manager. Similarly, older GRID vGPU Managers will not function correctly with this release of Windows guest drivers. See issue “VM running older NVIDIA vGPU drivers fails to initialize vGPU when booted,” on page 5.

Updates in this release:

- Miscellaneous bug fixes
VALIDATED PLATFORMS

This release of virtual GPU provides support for NVIDIA GRID K1, K2, and Tesla M60, M6 GPUs on Citrix XenServer, running on validated server hardware platforms. For a list of validated server platforms, refer to http://www.nvidia.com/buygrid.

SOFTWARE VERSIONS

This release has been tested with the following software versions:

<table>
<thead>
<tr>
<th>Software</th>
<th>Version tested</th>
</tr>
</thead>
</table>
| Citrix XenServer 6.2   | Version 6.2 with XS62ESP1 and applicable hotfixes including XS62ESP1009 and XS62ESP1011. The GRID vGPU Manager included in this release will not install without these hotfixes:  
  • XS62ESP1009 [link](http://support.citrix.com/article/CTX141191)  
  • XS62ESP1011 [link](http://support.citrix.com/article/CTX141472) |
| Citrix XenServer 6.5   | Version 6.5 with XS65ESP1. The GRID vGPU Manager included in this release will not install without XenServer 6.5 SP1. |
| Citrix XenDesktop      | Version 7.1, 7.5, 7.6 in HDX 3D Pro mode. Versions 7.1 and 7.5 have the following hotfix applied:  
  • XD710ICAWSWX86004 (32-bit) [link](http://support.citrix.com/article/CTX140262) or  
  • XD710ICAWSWX64004 (64-bit) [link](http://support.citrix.com/article/CTX140263) |

Note: GRID vGPU on Citrix XenServer 6.2 does not support operation with physical GPUs BARs mapped above the 4 Gigabyte boundary in the system address space.  
For XenServer 6.2, ensure that GPUs are mapped below the 4G boundary by disabling your server’s SBIOS option that controls 64-bit memory-mapped I/O support. This option may be
labeled “Enable >4G Decode” or “Enable 64-bit MMIO”. See issue “Virtual GPU fails to start when GPUs are mapped above 4G.” on page 5.

Linux support

GRID vGPU with the following guest VMs is supported on Tesla M60 and M6, as a technical preview feature on Citrix XenServer 6.5:

- Red Hat Enterprise Linux 7.0-7.3
- CentOS 7.0-7.3

! Note: Linux vGPU is not supported on XenServer 6.2.

HARDWARE CONFIGURATION

Tesla M60 and M6 GPUs support compute and graphics modes, which can be configured using the `gpumodeswitch` tool provided with GRID software releases. GRID vGPU requires that M60 / M6 are configured in graphics mode.
**KNOWN ISSUES**

<table>
<thead>
<tr>
<th>NVENC requires at least 1 Gbyte of frame buffer</th>
</tr>
</thead>
</table>
| **Description** | Using the frame buffer for the NVIDIA hardware-based H.264/HEVC video encoder (NVENC) may cause memory exhaustion with vGPU profiles that have 512 Mbytes or less of frame buffer. To reduce the possibility of memory exhaustion, NVENC is disabled on profiles that have 512 Mbytes or less of frame buffer. Application GPU acceleration remains fully supported and available for all profiles, including profiles with 512 Mbytes or less of frame buffer. NVENC support from Citrix is a recent feature and, if you are using an older version, you should experience no change in functionality. The following vGPU profiles have 512 Mbytes or less of frame buffer:  
  - Tesla M6-0B, M6-0Q  
  - Tesla M60-0B, M60-0Q  
  - GRID K100, K120Q  
  - GRID K200, K220Q  

| **Workaround** | If you require NVENC to be enabled, use a profile that has at least 1 Gbyte of frame buffer. |
| **Status**     | Closed |
| **Ref. #**     | 1816861 |
VM running older NVIDIA vGPU drivers fails to initialize vGPU when booted

**Description**

A VM running older NVIDIA drivers, such as those from a previous vGPU release, will fail to initialize vGPU when booted on a XenServer platform running the current release of GRID Virtual GPU Manager.

In this scenario, the VM boots in standard VGA mode with reduced resolution and color depth. The NVIDIA GRID GPU is present in Windows Device Manager but displays a warning sign, and a device status of “Windows has stopped this device because it has reported problems. (Code 43)”.

Depending on the versions of drivers in use, XenServer’s `/var/log/messages` may contain the error message:

vmiop_log: error: Unable to fetch Guest NVIDIA driver information

or may report a version mismatch between guest and host drivers:

vmiop_log: error: Guest VGX version(1.1) and Host VGX version(1.2) do not match

or report a signature mismatch:

vmiop_log: error: VGPU message signature mismatch.

**Fix**

Install the latest NVIDIA vGPU release drivers in the VM.

**Status**

Open

**Ref. #**

Virtual GPU fails to start if ECC is enabled

**Description**

GRID K2, Tesla M60, and Tesla M6 support ECC (error correcting code) for improved data integrity. If ECC is enabled, virtual GPU fails to start. The following error is logged in `/var/log/messages`:

vmiop_log: error: Initialization: VGX not supported with ECC Enabled.

Virtual GPU is not currently supported with ECC active. GRID K2 cards and Tesla M60, M6 cards in graphics mode ship with ECC disabled by default, but ECC may subsequently be enabled using `nvidia-smi`.

**Workaround**

Use `nvidia-smi` to list status on all GPUs, and check for ECC noted as enabled on GPUs. Change the ECC status to off on a specific GPU by executing ‘`nvidia-smi -i <id> -e 0`’, where `<id>` is the index of the GPU as reported by `nvidia-smi`.

**Status**

Open

**Ref. #**
### Single vGPU benchmark scores are lower than passthrough GPU

| Description | A single vGPU configured on a physical GPU produces lower benchmark scores than the physical GPU run in passthrough mode. Aside from performance differences that may be attributed to a vGPU’s smaller framebuffer size, vGPU incorporates a performance balancing feature known as Frame Rate Limiter (FRL), which is enabled on all vGPUs. FRL is used to ensure balanced performance across multiple vGPUs that are resident on the same physical GPU. The FRL setting is designed to give good interactive remote graphics experience but may reduce scores in benchmarks that depend on measuring frame rendering rates, as compared to the same benchmarks running on a passthrough GPU. |
| Workaround | FRL is controlled by an internal vGPU setting. NVIDIA does not validate vGPU with FRL disabled, but for validation of benchmark performance, FRL can be temporarily disabled by specifying `frame_rate_limiter=0` in the VM’s `platform:vgpu_extra_args` parameter: 

```
[root@xenserver ~]# xe vm-param-set uuid=e71afda4-53f4-3a1b-6c92-a364a7f619c2 platform:vgpu_extra_args="frame_rate_limiter=0"
[root@xenserver ~]#
```

The setting takes effect the next time the VM is started or rebooted. With this setting in place, the VM’s vGPU will run without any frame rate limit. The FRL can be reverted back to its default setting by removing the `vgpu_extra_args` key from the `platform` parameter, or by removing `frame_rate_limiter=0` from the `vgpu_extra_args` key, or by setting `frame_rate_limiter=1`. For example: 

```
[root@xenserver ~]# xe vm-param-set uuid=e71afda4-53f4-3a1b-6c92-a364a7f619c2 platform:vgpu_extra_args="frame_rate_limiter=1"
[root@xenserver ~]#
```

| Status | Open |
| Ref. # | |
**Virtual GPU fails to start when GPUs are mapped above 4G**

<table>
<thead>
<tr>
<th>Description</th>
<th>GRID vGPU on Citrix XenServer 6.2 does not support operation with GPUs mapped above the 4 gigabyte (4G) boundary in the system’s physical address space. If GPUs are mapped above 4G, the GRID vGPU Manager rpm will warn at the time of installation:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Warning: vGPU does not support GPUs mapped in 64-bit address space. Please disable 64-bit MMIO from the system's BIOS. Refer to vGPU release notes for details.</td>
</tr>
<tr>
<td></td>
<td>Also, the NVIDIA kernel driver will fail to load in XenServer’s dom0, so the nvidia module won’t appear in the module listing produced by lsmod. Additionally, the following warning messages will be present in the output of dmesg:</td>
</tr>
<tr>
<td></td>
<td>NVRM: This PCI I/O region assigned to your NVIDIA device is invalid: NVRM: BAR1 is 128M @ 0xf800000000000000 (PCI:03ff:00:07.0) NVRM: This is a 64-bit BAR mapped above 4GB by the system NVRM: BIOS or the Linux kernel. The NVIDIA Linux/x86 NVRM: graphics driver and other system software components NVRM: do not support this configuration.</td>
</tr>
<tr>
<td>Version</td>
<td>XenServer 6.2</td>
</tr>
<tr>
<td>Workaround</td>
<td>Ensure that GPUs are mapped below the 4G boundary by disabling your server’s SBIOS option that controls 64-bit memory-mapped I/O support. This option may be labeled “Enable &gt;4G Decode” or “Enable 64-bit MMIO”.</td>
</tr>
<tr>
<td>Status</td>
<td>Fixed in XenServer 6.5</td>
</tr>
<tr>
<td>Ref. #</td>
<td>NVIDIA-184</td>
</tr>
</tbody>
</table>
nvidia-smi fails to operate when all GPUs are assigned to GPU passthrough mode.

<table>
<thead>
<tr>
<th>Description</th>
<th>If all GPUs in the platform are assigned to VMs in passthrough mode, nvidia-smi will return an error:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[root@xenserver-vgx-test ~]# nvidia-smi</td>
</tr>
<tr>
<td></td>
<td>Failed to initialize NVML: Unknown Error</td>
</tr>
<tr>
<td></td>
<td>This is because GPUs operating in passthrough mode are not visible to nvidia-smi and the NVIDIA kernel driver operating in XenServer’s dom0.</td>
</tr>
<tr>
<td></td>
<td>To confirm that all GPUs are operating in passthrough, use XenCenter’s GPU tab to review current GPU assignment:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fix</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Open</td>
</tr>
<tr>
<td>Ref. #</td>
<td>N/A</td>
</tr>
</tbody>
</table>
**Windows Aero is disabled on XenDesktop session using 3 or 4 monitors in 2560x1600 resolution**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Aero may be disabled when XenDesktop is connected to a VM with a vGPU or passthrough GPU, with 3 or 4 monitors at 2560x1600 resolution. This is a limitation of Windows 7, refer Microsoft’s knowledge base article at <a href="https://support.microsoft.com/en-us/kb/2724530">https://support.microsoft.com/en-us/kb/2724530</a>.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Workaround</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ref. #</th>
</tr>
</thead>
<tbody>
<tr>
<td>NVIDIA-226 / 1456343</td>
</tr>
</tbody>
</table>
VMs configured with large memory fail to initialize vGPU when booted

| Description | When starting multiple VMs configured with large amounts of RAM (typically more than 32GB per VM), a VM may fail to initialize vGPU. In this scenario, the VM boots in standard VGA mode with reduced resolution and color depth. The NVIDIA GRID GPU is present in Windows Device Manager but displays a warning sign, and a device status of “Windows has stopped this device because it has reported problems. (Code 43)”.

XenServer’s /var/log/messages contains these error messages:

vmio_log: error: NVOS status 0x29
vmio_log: error: Assertion Failed at 0x7620fd4b:179
vmio_log: error: 8 frames returned by backtrace ...
vmio_log: error: VGPU message 12 failed, result code: 0x29 ...
vmio_log: error: NVOS status 0x8
vmio_log: error:Assertion Failed at 0x7620c8df:280
vmio_log: error: 8 frames returned by backtrace ...
vmio_log: error: VGPU message 26 failed, result code: 0x8

| Workaround | vGPU reserves a portion of the VM’s framebuffer for use in GPU mapping of VM system memory. The reservation is sufficient to support up to 32GB of system memory, and may be increased to accommodate up to 64GB by specifying enable_large_sys_mem=1 in the VM’s platform:vgpu_extra_args parameter:

```
[root@xenserver ~]# xe vm-param-set uuid=e71afda4-53f4-3a1b-6c92-a364a7f619c2 platform:vgpu_extra_args="enable_large_sys_mem=1"
```

The setting takes effect the next time the VM is started or rebooted. With this setting in place, less GPU FB is available to applications running in the VM. To accommodate system memory larger than 64GB, the reservation can be further increased by specifying extra_fb_reservation in the VM’s platform:vgpu_extra_args parameter, and settings its value to the desired reservation size in megabytes. The default value of 64M is sufficient to support 64GB of RAM. We recommend adding 2M of reservation for each additional 1GB of system memory. For example, to support 96GB of RAM, set extra_fb_reservation to 128:

```
platform:vgpu_extra_args="enable_large_sys_mem=1,
extra_fb_reservation=128"
```

The reservation can be reverted back to its default setting by removing the vgpu_extra_args key from the platform parameter, or by removing enable_large_sys_mem from the vgpu_extra_args key, or by setting enable_large_sys_mem=0.

| Status | Fixed |
| Ref. # | 1510886 |
### vGPU host driver RPM upgrade fails

**Description**  
Upgrading vGPU host driver RPM fails with the following message on the console:

```bash
[root@xenserver ~]# rpm -U NVIDIA-vGPU-xenserver-6.5-352.46.x86_64.rpm  
error: Failed dependencies:
   NVIDIA-vgx-xenserver conflicts with NVIDIA-vGPU-xenserver-6.5-352.46.x86_64
[root@xenserver ~]#
```

**Version**

**Workaround**
Uninstall the older vGPU RPM before installing the latest driver.

Use the following command to uninstall the older vGPU RPM:

```
[root@xenserver ~]# rpm -e NVIDIA-vgx-xenserver
```

**Status**  
Closed

**Ref. #**  
200133635

---

### Desktop session is unable to scale to resolutions higher than 1280x1024 on VMs running vGPU on Tesla M6 or Tesla M60

**Description**  
GRID vGPU is a licensed feature on Tesla M6 and M60. A software license is required to enable full vGPU features within the guest VM.

**Version**

**Fix**
Please refer to [GRID Licensing User Guide](#) on how to license your vGPU VM.

**Status**  
Open

**Ref. #**

---

### Desktop sessions run at a low frame rate on VMs running vGPU on Tesla M6 or Tesla M60

**Description**  
GRID vGPU is a licensed feature on Tesla M6 and M60. A software license is required to enable full vGPU features within the guest VM.

**Version**

**Fix**
Please refer to [GRID Licensing User Guide](#) on how to license your vGPU VM.

**Status**  
Open

**Ref. #**

---
### Applications fail to start on VMs running vGPU on Tesla M6 or Tesla M60

**Description**  
Applications fail to start within the VM, and the following error is logged in `/var/log/messages`:

```
vmiop_log: error: Guest is unlicensed. Cannot allocate more than 0x20 channels!
```

GRID vGPU is a licensed feature on Tesla M6 and M60. A software license is required to enable full vGPU features within the guest VM.

**Version**

**Fix**  
Please refer to GRID Licensing User Guide on how to license your vGPU VM.

**Status**  
Open

**Ref. #**

### Memory exhaustion can occur with vGPU profiles that have 512 Mbytes or less of frame buffer

**Description**  
Memory exhaustion can occur with vGPU profiles that have 512 Mbytes or less of frame buffer. This issue typically occurs when multiple display heads are used with Citrix XenDesktop or VMware Horizon on a Windows 10 guest VM.

When this error occurs, the NVIDIA host driver reports Xid error 31 and Xid error 43 in XenServer’s `/var/log/messages` file.

The following vGPU profiles have 512 Mbytes or less of frame buffer:
- Tesla M6-0B, M6-0Q
- Tesla M60-0B, M60-0Q
- GRID K100, K120Q
- GRID K200, K220Q

**Version**

**Workaround**

**Status**  
Open

**Ref. #**  
200130864
### MPlayer, or other video players, fail to start when using hardware acceleration on Linux VMs running vGPU

<table>
<thead>
<tr>
<th>Description</th>
<th>VDPAU is currently not supported on Linux VMs running vGPU.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td></td>
</tr>
<tr>
<td>Workaround</td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>Fixed</td>
</tr>
<tr>
<td>Ref. #</td>
<td>200144667</td>
</tr>
</tbody>
</table>

### Multiple WebGL tabs in Microsoft Internet Explorer may trigger TDR on Windows VMs

<table>
<thead>
<tr>
<th>Description</th>
<th>Running intensive WebGL applications in multiple IE tabs may trigger a TDR on Windows VMs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td></td>
</tr>
<tr>
<td>Workaround</td>
<td>Disable hardware acceleration in IE.</td>
</tr>
<tr>
<td></td>
<td>To enable software rendering in IE, refer Microsoft’s knowledge base article at <a href="https://support.microsoft.com/en-us/kb/2528233">https://support.microsoft.com/en-us/kb/2528233</a>.</td>
</tr>
<tr>
<td>Status</td>
<td>Open</td>
</tr>
<tr>
<td>Ref. #</td>
<td>200148377</td>
</tr>
</tbody>
</table>

### Black screen on initial connection to a VM using XenDesktop from a client with multiple displays

<table>
<thead>
<tr>
<th>Description</th>
<th>The initial connection to a VM that uses XenDesktop from a client with multiple displays results in a black screen. Disconnecting and reconnecting to the VM resolves the issue.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fix</td>
<td></td>
</tr>
<tr>
<td>Status</td>
<td>Fixed</td>
</tr>
<tr>
<td>Ref. #</td>
<td>1720471</td>
</tr>
</tbody>
</table>

### Video goes blank when run in loop in Windows Media Player

<table>
<thead>
<tr>
<th>Description</th>
<th>When connected to a vGPU-enabled VM using Citrix XenDesktop, a video played back in looping mode on Windows Media Player goes blank or freezes after a few iterations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workaround</td>
<td>None</td>
</tr>
<tr>
<td>Status</td>
<td>Open</td>
</tr>
<tr>
<td>Ref. #</td>
<td>1306623</td>
</tr>
</tbody>
</table>
### Local VGA console is momentarily unblanked when XenDesktop changes resolution of the VM desktop

**Description**

When XenDesktop establishes a remote connection to a VM using vGPU, the VM’s local VGA console display in XenCenter is blanked (assuming the VM local console has not been disabled by setting `platform:vgpu_extra_args="disable_vnc=1"`). If the XenDesktop session changes resolution of the VM’s desktop, the local VGA console momentarily unblanks, allowing a XenCenter user to briefly view the desktop.

**Workaround**

Disable the VM's local VGA console:

```
xe vm-param-set uuid=<vm-uuid>
platform:vgpu_extra_args="disable_vnc=1"
```

**Status**

Open

**Ref. #**

NVIDIA-145 / 1375164

---

### VM bugchecks on shutdown/restart when XenDesktop is installed and NVIDIA driver is uninstalled or upgraded.

**Description**

If the XenDesktop agent is installed in a VM before any NVIDIA GPU driver is installed, the VM will bugcheck (bluescreen) when the NVIDIA driver is subsequently upgraded or uninstalled. The bugcheck code is 0x7E, `SYSTEM_THREAD_EXCEPTION_NOT_HANDLED`.

**Workaround**

Do a force shutdown of the VM and restart it. Alternatively, install the NVIDIA driver in guest VMs before installing XenDesktop.

**Status**

Open

**Ref. #**

NVIDIA-295 / 200018125

---

### Application frame rate may drop when running XenDesktop at 2560x1600 resolution.

**Description**

An application’s rendering frame rate may drop when running XenDesktop at 2560x1600 resolution, relative to the frame rate obtained at lower resolutions.

**Fix**

Using the Windows `regedit` utility within the VM, open the `HKLM\SOFTWARE\Citrix\Graphics` registry key and create a new DWORD value, `EncodeSpeed`, with a value of 2. Reboot the VM. This setting may improve the delivered frame rate at the expense of a reduction in image quality.

**Status**

Open

**Ref. #**

NVIDIA-190 / 1416336
Windows VM BSOD

Description
Windows VM bugchecks on XenServer when running a large number of vGPU based VMs.

XenServer’s /var/log/messages contains these error messages:

NVRM: Xid (PCI:0000:08:00): 31, Ch 0000001e, engmask 00000111, intr 10000000
NVRM: Xid (PCI:0000:08:00): 31, Ch 00000016, engmask 00000111, intr 10000000
...
vmiop_log: error: Assertion Failed at 0xb5b898d8:4184
vmiop_log: error: 8 frames returned by backtrace
vmiop_log: error: /usr/lib/libnvidia-vgx.so(_nv000793vgx+0x69d) [0xb5b8064d]
vmiop_log: error: /usr/lib/libnvidia-vgx.so(_nv000479vgx+0x118) [0xb5b898d8]
vmiop_log: error: /usr/lib/libnvidia-vgx.so(_nv000782vgx+0x59) [0xb5b85f49]
vmiop_log: error: /usr/lib/libnvidia-vgx.so(_nv000347vgx+0x3db) [0xb5b932db]
vmiop_log: error: /usr/lib/libnvidia-vgx.so [0xb5b932db]
vmiop_log: error: /usr/lib/xen/bin/vgpu [0x80554be]
vmiop_log: error: /lib/libpthread.so.0 [0xb7612912]
vmiop_log: error: /lib/libc.so.6(clone+0x5e) [0xb76fc5ee]
vmiop_log: error: failed to initialize guest PTE entries
vmiop_log: error: failed to fill up guest PTE entries 3
vmiop_log: error: VGPU message 27 failed, result code: 0xff000003
vmiop_log: error: Timeout occurred, reset initiated.

Version XenServer 6.2
Fix Please ensure that you are running the latest OEM firmware for your GRID boards.
Status Closed
Ref. # NVIDIA-327 / 1632120

Windows VM BSOD when upgrading NVIDIA drivers over a XenDesktop session

Description
Windows VM bugchecks when NVIDIA guest drivers are upgraded over a XenDesktop session.

If the VM is restarted after the bugcheck, the upgraded driver loads correctly and full functionality is available.

Version
Fix Upgrade XenDesktop to 7.6 Feature Pack 3
Status Closed
Ref. # NVIDIA-370 / 200130780
### XenCenter does not allow vGPUs to be selected as a GPU type for Linux VMs

| Description | When creating a new Linux VM or editing the properties of an existing Linux VM, XenCenter does not allow vGPUs to be selected as a GPU type.  
| vGPU on Linux VMs is supported as a technical preview on XenServer 6.5, and does include XenCenter integration. |
| Version |  
| Workaround | Please refer to Chapter 5 - XenServer vGPU Management in the GRID vGPU User Guide on how to configure vGPU using xe CLI. |
| Status | Closed |
| Ref. # | NVIDIA-360 |

### If X server is killed on a RHEL7 VM running vGPU, XenCenter console may not automatically switch to text console

| Description | If X server is killed on a RHEL7 VM running vGPU, XenCenter console may display a corrupted image and fail to switchover to text console.  
| The failure to switchover to text console is due to a bug in RHEL7, which causes X server to not start correctly under certain configurations. |
| Version |  
| Workaround | Use CTRL + ALT + F[1|2|3|...] to switch between Linux terminals |
| Status | Closed |
| Ref. # | NVIDIA-350 / 200123378 |
**Known Issues**

### XenDesktop shows only a black screen when connected to a vGPU VM

<table>
<thead>
<tr>
<th>Description</th>
<th>XenDesktop sometimes displays only a black screen when it is connected to an NVIDIA vGPU VM. The probable cause is that the display that is connected to the NVIDIA vGPU is entering a lower power state.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fix</td>
<td>Disable all display-related power management settings.</td>
</tr>
<tr>
<td></td>
<td>For detailed instructions, visit the Microsoft power plans frequently asked questions at <a href="http://windows.microsoft.com/en-us/windows/power-plans-faq">http://windows.microsoft.com/en-us/windows/power-plans-faq</a> and from the list, select your OS version.</td>
</tr>
<tr>
<td>Status</td>
<td>Not an NVIDIA bug</td>
</tr>
<tr>
<td>Ref. #</td>
<td>1719877</td>
</tr>
</tbody>
</table>

### After a reboot of the VM, the task bar moves to the secondary monitor when the view session is reconnected

<table>
<thead>
<tr>
<th>Description</th>
<th>After a reboot of the VM, the task bar moves to the secondary monitor when the view session is reconnected. The issue occurs only on the first connection after the reboot while VM is rebooted from the view session.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td>Change the view session from full-screen mode to window mode and then change it back to full-screen mode:</td>
</tr>
<tr>
<td>Workaround</td>
<td>1. In the view session screen, click the <img src="image" alt="Restore Down" /> (Restore Down) icon to change the view session to window mode.</td>
</tr>
<tr>
<td></td>
<td>2. In the title bar of the view session window, click the <img src="image" alt="Maximize" /> (Maximize) icon to change the view session back again to full-screen mode.</td>
</tr>
<tr>
<td>Status</td>
<td>Closed</td>
</tr>
<tr>
<td>Ref. #</td>
<td>200170401</td>
</tr>
</tbody>
</table>

### The second VM fails to boot after the NVIDIA driver is installed

<table>
<thead>
<tr>
<th>Description</th>
<th>If an NVIDIA vGPU is assigned to two VMs and the NVIDIA guest driver is installed on one VM, only the VM on which driver is installed boots correctly. The other VM fails to boot.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version</td>
<td></td>
</tr>
<tr>
<td>Workaround</td>
<td>Configure each VM with two or more vCPUs.</td>
</tr>
<tr>
<td></td>
<td>For instructions, see <a href="https://www.citrix.com/support/article.aspx?id=1751170">How to Set Cores-Per-Socket Parameter for a Virtual Machine</a> in the Citrix Support Knowledge Center.</td>
</tr>
<tr>
<td>Status</td>
<td>Open</td>
</tr>
<tr>
<td>Ref. #</td>
<td>1751170</td>
</tr>
</tbody>
</table>
### NVIDIA driver forces Tesla M60 to be the primary display adapter

| Description | After the NVIDIA driver is installed on a Tesla M60 GPU on a server running baremetal Windows (no hypervisor), a black or blue screen is observed as the primary display switches from iGPU to Tesla M60.  
|--------------|--------------------------------------------------------------------------------|
|              | ▶ If the Windows default WDDM driver is installed for an iGPU device such as Matrox, a blue screen is observed.  
|              | ▶ If the iGPU driver is installed, a black screen is observed.  
| Version      |  
| Workaround   | 1. Before installing the NVIDIA driver on your server, ensure that the server is connected to the network and is accessible through remote access software such as VNC.  
|              | 2. Connect to the server through IPMI or VNC and install the NVIDIA driver.  
|              | 3. When the installation of the NVIDIA driver is complete, reboot the server.  
|              | After you reboot the server, the IPMI display may display only a black or a blue screen. In this situation, display the OS desktop on the IPMI display by configuring the first display to be the active display. The first display is identified as 1 and corresponds to the server’s onboard VGA device.  
|              | 1. Connect to the server through the remote access software that you are using.  
|              | 2. Open Windows Control Panel.  
|              | 3. In Windows Control Panel, click **Appearance and Personalization** and then **Connect to an external display**.  
|              | 4. If Windows Control Panel does not show the display that is connected to the server’s onboard VGA device, click **Detect**.  
|              | 5. In the **Multiple displays** list, click **Show desktop only on 1** and then click **Apply**.  
| Status       | Not an NVIDIA bug  
| Ref. #       | 1727289 |
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