DGX SOFTWARE FOR RED HAT ENTERPRISE LINUX 7

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Release Notes

TABLE OF CONTENTS

Chapter 1. DGX Software For Red Hat Enterprise Linux 7 Overview.....1
Chapter 2. Version EL7-19.02.....2
Chapter 3. Version EL7-18.11.....4
Chapter 4. Known Issues.....6
4.1. Black Screen on BMC Remote Console with Red Hat Enterprise Linux 7.5.....6
4.2. NVSM CLI Returns HTTP Code 500 Error After Hot-Plugging a Previously Removed SSD.....8

Chapter 1. DGX SOFTWARE FOR RED HAT ENTERPRISE LINUX 7 OVERVIEW

NVIDIA provides a NVIDIA® DGX™ software stack targeted for installation on DGX systems that have been user-installed with Red Hat Enterprise Linux. The software stack provides the same features and functionality that are provided by the original DGX OS server software built upon the Ubuntu operating system. See also the DGX Software on Red Hat Enterprise Linux 7 Installation Guide.

Chapter 2. VERSION EL7-19.02

The DGX Software for Red Hat Enterprise Linux 7, Version EL7-19.02, is available.

Change Highlights

Includes security updates to the NVIDIA GPU driver. For more information, see Security Bulletin: NVIDIA GPU Display Driver - February 2019.

Software Contents

The following table provides version information for software included in the DGX Software Stack for Red Hat Enterprise Linux 7 and Red Hat-derived operating systems.

Unlike the DGX OS shipped with the NVIDIA DGX-1, the DGX software stack for Red Hat-derived operating systems does not include the Mellanox OpenFabrics Enterprise Distribution (MLNX_OFED) for Linux. This is due to the likelihood of the MLNX_OFED kernel being out of sync with the Red Hat distribution kernel. This can result in system instability. To use InfiniBand on the DGX-1, see the DGX Software for Red Hat Enterprise Linux 7 Installation Guide for instructions.

Component	Version
DGX Software	EL7-19.02
GPU Driver	410.104
NVIDIA System Health Monitor (NVSM)	nvsm-cli 19.02.1 nvsm-dshm 19.02.2 nvsm-apis 19.02.2 nvsysinfo 19.01.4 nvhealth 19.01.3

Component	Version
Data Center GPU Management (DCGM)	1.5.9
NCCL Runtime	2.4.2
cuDNN Library Runtime	7.4.2
TensorRT	5.0.2.6-1
CUDA Toolkit	10.0

Compatibility

NVIDIA has validated and tested the **DGX Software version EL7-19.02** on the

- NVIDIA DGX-1 (Tesla V100) with
- Red Hat Enterprise Linux 7.6.

Known Issues

- Black screen on BMC Remote Console with Red Hat Enterprise Linux 7.5
- NVSM CLI Returns HTTP Code 500 Error After Hot-Plugging a Previously Removed SSD

Chapter 3. VERSION EL7-18.11

The DGX Software for Red Hat Enterprise Linux 7 - Version EL7-18.11- is available.

Software Contents

The following table provides version information for software included in the DGX Software Stack for Red Hat Enterprise Linux 7 and Red Hat-derived operating systems.

Unlike the DGX OS shipped with the NVIDIA DGX-1, the DGX software stack for Red Hat-derived operating systems does not include the Mellanox OpenFabrics Enterprise Distribution (MLNX_OFED) for Linux. This is due to the likelihood of the MLNX_OFED kernel being out of sync with the Red Hat distribution kernel. This can result in system instability. To use InfiniBand on the DGX-1, see the DGX Software for Red Hat Enterprise Linux 7 Installation Guide for instructions.

Component	Version
DGX Software	EL7-18.11
GPU Driver	410.79
NVIDIA System Health Monitor (NVSM)	nvsm-cli 18.10.6-1.el7.x86_64 nvsm-dshm 18.12-2.el7.noarch nvsm-apis 18.10.11-1.el7.x86_64 nvsysinfo 18.10.5-1.el7.x86_64 nvhealth 18.10.10-1.el7.x86_64
Data Center GPU Management (DCGM)	1.5.3-1
NCCL Runtime	2.3.7-1
cuDNN Library Runtime	7.3.1.20-1

Component	Version
TensorRT	5.0.2.6-1
CUDA Toolkit	10.0

Compatibility

NVIDIA has validated and tested the **DGX Software version EL7-18.11** on the

- NVIDIA DGX-1 (Tesla V100) with
- Red Hat Enterprise Linux 7.5.

Known Issues

- Black screen on BMC Remote Console with Red Hat Enterprise Linux 7.5
- NVSM CLI Returns HTTP Code 500 Error After Hot-Plugging a Previously Removed SSD

Chapter 4. KNOWN ISSUES

See the sections for specific versions to see which issues are open in those versions.

4.1. Black Screen on BMC Remote Console with Red Hat Enterprise Linux 7.5

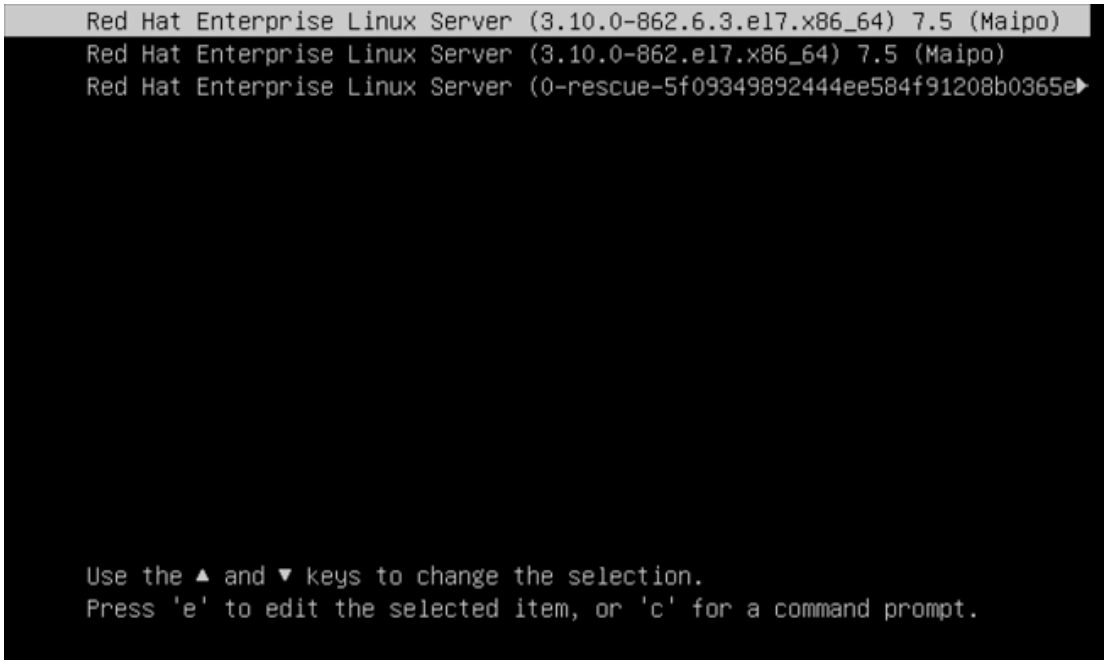
Issue

After installing Red Hat Enterprise Linux 7.5 and booting to the command line, the video output might display only a black screen and not show any regular characters (only bold or colored characters might be printed).

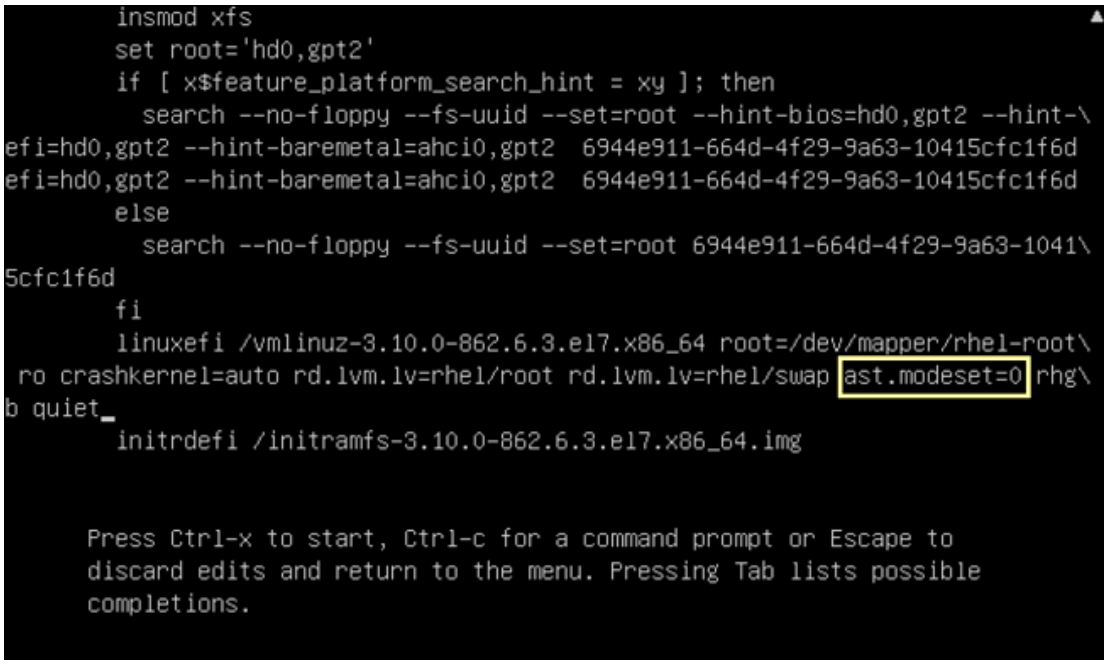
Workaround

Provide the additional ast.modeset=0 option to the kernel as follows.

1. Boot the system, then select Install Red Hat Enterprise Linux 7.5 from the grub menu and then press ‘e’ to edit the boot command.



2. Move the cursor down to the boot command line and add **`ast.modeset=0`** anywhere after the Linux boot image name "**`linuxefi /vmlinuz-<version>`**" as indicated in the following image.



3. Press **`Ctrl-x`** to boot the kernel with the modified setting.

   All characters should now be visible during the boot process and terminal log-in.

Until you complete the installation of the "DGX Configurations" software group, you will need to perform these steps any time you reboot the system. After installing

the “DGX Configurations” software group, the software adds the modeset setting permanently and you no longer need to perform the steps manually.

4.2. NVSM CLI Returns HTTP Code 500 Error After Hot-Plugging a Previously Removed SSD

Issue

After removing one of the cache SSDs from the DGX-1, checking the status using NVSM CLI, and then hot-plugging the SSD back in, NVSM CLI reports an HTTP code 500 error.

Example, where drive 20:4 is the reinserted SSD (20 is the enclosure ID and 4 is the drive slot):

```
nvsm-> show /systems/localhost/storage/drives/20:4

/systems/localhost/storage/drives/20:4

ERROR:nvsm:Bad HTTP status code "500" from NVSM backend: Internal Server Error
```

Explanation and Workaround

After re-inserting the SSD back into the system, NVSM recognizes the drive but fails to get full device information from storCLI. Additionally, the RAID controller sets the array to offline and marks the re-inserted SSD as Unconfigured_Bad (UBad). This prevents the RAID 0 array from being recreated.

To correct this condition,

1. Set the drive back to a good state.

   ```
   # sudo /opt/MegaRAID/storcli/storcli64 /c0/e<enclosure_id>/s<drive_slot> set good force
   ```

2. Run the script to recreate the array.

   ```
   # sudo configure_raid_array.py -c -f
   ```

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