DGX Software for Red Hat Enterprise Linux 8

Release Notes
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Chapter 1. DGX Software For Red Hat Enterprise Linux 8 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 and DGX OS Desktop software built upon the Ubuntu operating system. See also the DGX Software on Red Hat Enterprise Linux 8 Installation Guide.

1.1. Current Versions

The following are the current versions available.

<table>
<thead>
<tr>
<th>Product</th>
<th>Current Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>DGX Station</td>
<td>EL8-20.11</td>
</tr>
<tr>
<td>DGX-2, DGX-1</td>
<td>EL8-20.11</td>
</tr>
<tr>
<td>DGX A100</td>
<td>EL8-20.11</td>
</tr>
</tbody>
</table>

1.2. Installing and Updating the Software

Installing the Software

To install the software on a fresh DGX system, see the DGX Software for Red Hat Enterprise Linux 8 - Installation Guide.

Updating the Software

To update your DGX system to the latest version from a previous EL8 version, do the following:

```
sudo dnf update -y --nobest
```
Chapter 2. Version EL8-20.11

The DGX Software for Red Hat Enterprise Linux 8, EL8-20.11, is available. EL8-20.11 supports all DGX products - DGX A100, DGX-2, DGX-1, and DGX Station.

Important: Installing or updating to EL8-20.11 also updates the installed Red Hat Enterprise Linux 8 distribution to the latest version. If you require use of the Mellanox OpenFabrics Enterprise Distribution for Linux (MLNX_OFED), then before installing or updating to EL8-20.11, be sure that there is a MLNX_OFED package version available that supports the latest Red Hat Enterprise Linux 8 version.

‣ To check the latest Red Hat Enterprise Linux 8 version, visit https://access.redhat.com/articles/3078
‣ To check the MLNX_OFED package OS support, visit https://docs.mellanox.com/category/mlnxofedib, click the latest MLNX_OFED software version and then use the side menu to navigate to Release Notes->General Support in MLNX_OFED and view Supported Operating Systems.

If a supporting MLNX_OFED package has been released, then be sure to install it.

Change Highlights

‣ Initial release of the DGX for Red Hat Enterprise Linux 8 software stack

Software Contents:

The following table provides version information for software included in the DGX Software Stack for Red Hat Enterprise Linux 8.

Note: Unlike the DGX OS shipped with the NVIDIA DGX system, the DGX software stack for Red Hat does not include the Mellanox OpenFabrics Enterprise Distribution (MLNX_OFED) for Linux. When using MLNX_OFED with Red Hat, ensure you install a supported MLNX_OFED kernel version to avoid incompatibilities with the Red Hat distribution kernel. Refer to the DGX Software for Red Hat Enterprise Linux 8 Installation Guide for instructions.
Table 1. Contents of the Repositories

<table>
<thead>
<tr>
<th>Component</th>
<th>Versions in the Release 450 Driver Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPU Driver</td>
<td><strong>450.80.02</strong></td>
</tr>
<tr>
<td>NVIDIA System Management (NVSM)</td>
<td>20.09.17</td>
</tr>
<tr>
<td>Data Center GPU Management (DCGM)</td>
<td>2.0.13</td>
</tr>
<tr>
<td>DGX Station Theme</td>
<td>dgxstation-desktop - 19.10-0</td>
</tr>
<tr>
<td></td>
<td>dgx-gnome - 19.10-0</td>
</tr>
<tr>
<td>CUDA Toolkit</td>
<td>CUDA 11.2</td>
</tr>
<tr>
<td>Docker Engine</td>
<td>19.03.13</td>
</tr>
<tr>
<td>nvidia-container-runtime</td>
<td>3.4.0-1</td>
</tr>
</tbody>
</table>

Compatibility

NVIDIA has validated and tested the **DGX Software version EL8-20.11** on the following systems:

- NVIDIA DGX A100 with Red Hat Enterprise Linux 8.3 and CentOS 8
- NVIDIA DGX-2 with Red Hat Enterprise Linux 8.3 and CentOS 8
- NVIDIA DGX-1 (V100) with Red Hat Enterprise Linux 8.3 and CentOS 8
- NVIDIA DGX Station with Red Hat Enterprise Linux 8.3 and CentOS 8
- 20.10 Deep Learning Framework containers

NVIDIA acknowledges the wide use of CentOS and understands that it is a community-developed derivative of the NVIDIA supported Red Hat Enterprise Linux. Support for CentOS is available directly from the CentOS community. NVIDIA ensures that NVIDIA provided software runs on tested CentOS versions and will try to identify and correct issues related to NVIDIA provided software.

Update Instructions

See the section [Installing and Updating the Software](#) for instructions.

Known Issues

- [DGX-1, DGX-2]: nvsm dump health Does not Generate sosreport
- [DGX-2]: No Rebuild Function for RAID 0 if Volume is not md1
- [DGX-2]: Storage Alerts Persist from Previous RAID Configuration
Chapter 3. Known Issues

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

3.1. [DGX-1, DGX-2]: nvsm dump health Does not Generate sosreport

Issue

After running `nvsm dump health`, the log file reports

```
INFO: Could not find sosreport output file
```

Analysis of the log files reveals that information is missing for components that are installed on the system; such as InfiniBand cards.

Explanation

The sosreport is not getting collected. This will be resolved in a later software release.

3.2. [DGX-2]: No Rebuild Function for RAID 0 if Volume is not md1

Issue

If the RAID 0 volumes are a designation other than `md1`, such as `md128`, then there is no Rebuild under Target.

Example:

```
$ nvsm show /systems/localhost/storage/volumes/md128
Properties:
    CapacityBytes = 61462699992678
    Encrypted = False
    Id = md128
    Drives = [ nvme10n1, nvme11n1, nvme12n1, nvme13n1, nvme14n1, nvme15n1, nvme16n1, 
                nvme17n1, nvme2n1, nvme3n1, nvme4n1, nvme5n1, nvme6n1, nvme7n1, nvme8n1, nvme9n1 ]
    Name = md128
```
### Known Issues

#### DGX Software for Red Hat Enterprise Linux 8

<table>
<thead>
<tr>
<th>Status Health</th>
<th>OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status State</td>
<td>Enabled</td>
</tr>
<tr>
<td>Volume Type</td>
<td>RAID-0</td>
</tr>
</tbody>
</table>

**Targets:**
- encryption

**Verbs:**
- cd
- show

**Explanation**

This occurs if the drives are not configured in the default configuration of two OS drives in a RAID 1 configuration and storage drives used for caching in a RAID 0 configuration. The `nvsm rebuild` command does not support non-standard drive configurations.

### 3.3. [DGX-2]: Storage Alerts Persist from Previous RAID Configuration

#### Issue

After switching to a custom drive configuration, such as by adding or removing storage drives, any NVSM storage alerts from the previous configuration will still be reported even though the current drive status is healthy.

For example, alerts can appear for md0 even though the current RAID drive name is md125 and healthy.

#### Explanation

To configure NVSM to support custom drive partitioning, perform the following.

1. **Edit** `/etc/nvsm/nvsm.config` and set the “use_standard_config_storage” parameter to false.
   ```
   "use_standard_config_storage":false
   ```
2. **Remove** the NVSM database.
   ```
   $ sudo rm /var/lib/nvsm/sqlite/nvsm.db
   ```
3. **Restart** NVSM.
   ```
   $ systemctl restart nvsm
   ```
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