



# Install GPU drivers for GPU-enabled compute nodes

HCI

Michael Wallis  
October 12, 2020

This PDF was generated from [https://docs.netapp.com/us-en/hci/docs/task\\_nde\\_install\\_GPU\\_drivers.html](https://docs.netapp.com/us-en/hci/docs/task_nde_install_GPU_drivers.html) on December 04, 2020. Always check docs.netapp.com for the latest.

# Table of Contents

Install GPU drivers for GPU-enabled compute nodes ..... 1

Find more information ..... 3

# Install GPU drivers for GPU-enabled compute nodes

Compute nodes with NVIDIA graphics processing units (GPUs), like the H610C, need NVIDIA software drivers installed in VMware ESXi so that they can take advantage of the increased processing power. After deploying compute nodes with GPUs, you need to perform these steps on each GPU-enabled compute node to install the GPU drivers in ESXi.

## Steps

1. Open a browser and browse to the NVIDIA licensing portal at the following URL:

```
https://nvid.nvidia.com/dashboard/
```

2. Download one of the following driver packages to your computer, depending on your environment:

vSphere version	Driver package
vSphere 6.5	NVIDIA-GRID-vSphere-6.5-410.92-410.91-412.16.zip
vSphere 6.7	NVIDIA-GRID-vSphere-6.7-410.92-410.91-412.16.zip

3. Extract the driver package on your computer.

The resulting .VIB file is the uncompressed driver file.

4. Copy the **.VIB** driver file from your computer to ESXi running on the compute node. The following example commands for each version assume that the driver is located in the `$HOME/NVIDIA/ESX6.x/` directory on the management host. The SCP utility is readily available in most Linux distributions, or available as a downloadable utility for all versions of Windows:

ESXi version	Description
ESXi 6.5	<pre>scp \$HOME/NVIDIA/ESX6.5/NVIDIA**.vib root@&lt;ESXi_IP_ADDR&gt;:/. </pre>
ESXi 6.7	<pre>scp \$HOME/NVIDIA/ESX6.7/NVIDIA**.vib root@&lt;ESXi_IP_ADDR&gt;:/. </pre>

5. Use the following steps to log in as root to the ESXi host and install the NVIDIA vGPU Manager in ESXi.
  - a. Run the following command to log in to the ESXi host as the root user:

```
ssh root@<ESXi_IP_ADDRESS>
```

- b. Run the following command to verify that no NVIDIA GPU drivers are currently installed:

```
nvidia-smi
```

This command should return the message `nvidia-smi: not found`.

- c. Run the following commands to enable maintenance mode on the host and install the NVIDIA vGPU Manager from the VIB file:

```
esxcli system maintenanceMode set --enable true  
esxcli software vib install -v /NVIDIA**.vib
```

You should see the message `Operation finished successfully`.

- d. Run the following command and verify that all eight GPU drivers are listed in the command output:

```
nvidia-smi
```

- e. Run the following command to verify that the NVIDIA vGPU package was installed and loaded correctly:

```
vmkload_mod -l | grep nvidia
```

The command should return output similar to the following: `nvidia 816 13808`

- f. Run the following command to reboot the host:

```
reboot -f
```

- g. Run the following command to exit maintenance mode:

```
esxcli system maintenanceMode set --enable false
```

6. Repeat steps 4-6 for any other newly deployed compute nodes with NVIDIA GPUs.
7. Perform the following tasks using the instructions in the NVIDIA documentation site:

- a. Install the NVIDIA license server.
- b. Configure the virtual machine guests for NVIDIA vGPU software.
- c. If you are using vGPU-enabled desktops in a virtual desktop infrastructure (VDI) context, configure VMware Horizon View for NVIDIA vGPU software.

## Find more information

- [NetApp HCI Documentation Center](#)
- [SolidFire and Element Software Documentation Center](#)

## Copyright Information

Copyright © 2020 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

## Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.