



NVIDIA GPU Cloud Image for Google Cloud Platform

Release Notes

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Chapter 1. NVIDIA GPU Cloud Image Overview

NVIDIA makes available on the Google Cloud Platform a customized NGC virtual machine image optimized for the NVIDIA® Volta™ GPU. Running NVIDIA GPU Cloud containers on this instance provides optimum performance for deep learning jobs.

See the [NGC with Google Cloud Platform Setup Guide](#) for instructions on setting up and using the VMI.

Chapter 2. Version 20.06.3

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20200629`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20200629`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20200629`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 450.51.05
- ▶ Docker Engine: 19.03.11
- ▶ NVIDIA Container Toolkit v1.1.1-1
Includes new command to run containers: `docker run --gpus all <container>`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:20.06-py3`
- ▶ (NGC Tensor Flow Image only) `nvcr.io/nvidia/tensorflow:20.06-tf1-py3`, `nvcr.io/nvidia/tensorflow:20.06-tf2-py3`

Key Changes

- ▶ Updated NVIDIA Driver to 450.51.05
- ▶ Updated Docker Engine to 19.03.11
- ▶ Updated NVIDIA Container Toolkit to v1.1.1-1

2.1. Known Issues

2.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously

Issue

Attempting to install CUDA on the VM will succeed, resulting in a potential conflict with the NVIDIA GPU driver included in the VM image.

Explanation

The configuration file to prevent driver installs is not working. This will be resolved in a later release of the VM image.

Chapter 3. Version 20.03.1

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20200324`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20200324`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20200324`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 440.64.01
- ▶ Docker Engine: 19.03.6
- ▶ NVIDIA Container Toolkit v1.0.5-1
Includes new command to run containers: `docker run --gpus all <container>`
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:20.02-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:20.02-tf1-py3`, `nvcr.io/nvidia/pytorch:20.02-tf2-py3`

Key Changes

- ▶ Updated Docker Engine to 19.03.6
- ▶ Updated NVIDIA Driver to 440.64.01

3.1. Known Issues

3.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously

Issue

Attempting to install CUDA on the VM will succeed, resulting in a potential conflict with the NVIDIA GPU driver included in the VM image.

Explanation

The configuration file to prevent driver installs is not working. This will be resolved in a later release of the VM image.

Chapter 4. Version 19.11.3

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20191114`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20191114`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20191114`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 440.33.01
- ▶ Docker CE: 19.03.4-ce
- ▶ NVIDIA Container Toolkit v1.0.5-1
 - Includes new command to run containers: `docker run --gpus all <container>`
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:19.10-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:19.10-py3`

Key Changes

- ▶ Updated Docker-CE to 19.03.4
- ▶ Updated NVIDIA Driver to 440.33.01

4.1. Known Issues

4.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously

Issue

Attempting to install CUDA on the VM will succeed, resulting in a potential conflict with the NVIDIA GPU driver included in the VM image.

Explanation

The configuration file to prevent driver installs is not working. This will be resolved in a later release of the VM image.

Chapter 5. Version 19.10.2

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20190809`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20190809`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20190809`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 418.87
- ▶ Docker CE: 19.03.2-ce
- ▶ NVIDIA Container Toolkit v1.0.5-1
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:19.09-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:19.09-py3`

Key Changes

- ▶ Updated Docker-CE to 19.03.2
- ▶ Replaced the NVIDIA Container Runtime for Docker with the NVIDIA Container Toolkit.
Includes new command to run containers: `docker run --gpus all <container>`

5.1. Known Issues

5.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously

Issue

Attempting to install CUDA on the VM will succeed, resulting in a potential conflict with the NVIDIA GPU driver included in the VM image.

Explanation

The configuration file to prevent driver installs is not working. This will be resolved in a later release of the VM image.

Chapter 6. Version 19.08.0

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20190809`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20190809`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20190809`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 418.87
- ▶ Docker CE: 18.09.8-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.1.0-1
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:19.06-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:19.06-py3`

Key Changes

- ▶ Updated NVIDIA Driver to version 418.87.
- ▶ Updated Docker-CE to 18.09.8
- ▶ Updated NVIDIA Container Runtime for Docker to v2.1.0-1

6.1. Known Issues

6.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously

Issue

Attempting to install CUDA on the VM will succeed, resulting in a potential conflict with the NVIDIA GPU driver included in the VM image.

Explanation

The configuration file to prevent driver installs is not working. This will be resolved in a later release of the VM image.

Chapter 7. Version 19.07.0

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20190628`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20190628`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20190628`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 418.67
- ▶ Docker CE: 18.09.7-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:19.06-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:19.06-py3`

Key Changes

- ▶ Incorporates updated Ubuntu kernel to address a security update.
Refer to <https://wiki.ubuntu.com/SecurityTeam/KnowledgeBase/SACKPanic> for details.
- ▶ Updated Docker-CE to 18.09.7: Incorporates security update.
Refer to <https://nvd.nist.gov/vuln/detail/CVE-2018-15664> for details.
- ▶ Incorporates cloud-init fix to allow updating older images to the latest kernel without user prompts.

7.1. Known Issues

7.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously

Issue

Attempting to install CUDA on the VM will succeed, resulting in a potential conflict with the NVIDIA GPU driver included in the VM image.

Explanation

The configuration file to prevent driver installs is not working. This will be resolved in a later release of the VM image.

Chapter 8. Version 19.05.1

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20190522`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20190522`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20190522`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 418.67
- ▶ Docker CE: 18.09.4-ce
- ▶ NVIDIA Container Runtime for Docker: (`nvidia-docker2`) v2.0.3
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:19.04-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:19.04-py3`

Key Changes

19.05.1

- ▶ Incorporates updated OS kernel to address a security update. Refer to <https://wiki.ubuntu.com/SecurityTeam/KnowledgeBase/MDS>.

19.05.0

- ▶ Updated the Ubuntu Server to 18.04 LTS
- ▶ Updated the NVIDIA Driver to 418.67
- ▶ Updated Docker CE to 18.09.4-ce.

8.1. Known Issues

8.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously

Issue

Attempting to install CUDA on the VM will succeed, resulting in a potential conflict with the NVIDIA GPU driver included in the VM image.

Explanation

The configuration file to prevent driver installs is not working. This will be resolved in a later release of the VM image.

Chapter 9. Version 19.03.0

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20190318`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20190318`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20190318`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 418.40.04
- ▶ Docker CE: 18.09.2
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:19.03-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:19.03-py3`

Key Changes

- ▶ Updated the NVIDIA Driver to 418.40.04

Known Issues

There are no known issues in this release.

Chapter 10. Version 19.02.0

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20190219`
- ▶ NGC with TensorFlow Image: `nvidia-gpu-cloud-image-tensorflow-20190219`
- ▶ NGC with PyTorch Image: `nvidia-gpu-cloud-image-pytorch-20190219`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 410.104
- ▶ Docker CE: 18.09.2
- ▶ NVIDIA Container Runtime for Docker: (`nvidia-docker2`) v2.0.3
- ▶ (NGC TensorFlow Image only) `nvcr.io/nvidia/tensorflow:19.04-py3`
- ▶ (NGC PyTorch Image only) `nvcr.io/nvidia/pytorch:19.04-py3`

Key Changes

- ▶ Initial release of images incorporating PyTorch and TensorFlow
- ▶ Updated the Ubuntu Server to 18.04 LTS
- ▶ Updated the NVIDIA Driver to 410.104
- ▶ Updated Docker CE to 18.09.2.

Known Issues

There are no known issues in this release.

Chapter 11. Version 18.11.1

Image Name

- ▶ NGC Image: `nvidia-gpu-cloud-image-20181121`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 410.79
- ▶ Docker CE: 18.06.1
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the NVIDIA driver to Release 410, version 410.79.

Known Issues

There are no known issues in this release.

Chapter 12. Version 18.09.1

Image Name

- ▶ Basic NGC Image: `nvidia-gpu-cloud-image-20180911`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 410.48
- ▶ Docker CE: 18.06.1

Key Changes

- ▶ Updated the NVIDIA driver to Release 410, version 410.48.
- ▶ Updated Docker CE to 18.06.1

Known Issues

There are no known issues in this release.

Chapter 13. Version 18.08.1

Image Name

nvidia-gpu-cloud-image-20180816

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 396.44
- ▶ Docker CE: 18.06-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the NVIDIA driver to 396.44.
- ▶ Updated Docker CE to 18.06

Known Issues

There are no known issues in this release.

Chapter 14. Version 18.07.0

Image Name

nvidia-gpu-cloud-image-20180717

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 396.37
- ▶ Docker CE: 18.03.1-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the NVIDIA driver to 396.37.

Known Issues

There are no known issues in this release.

Chapter 15. Version 18.06.0

Image Name

nvidia-gpu-cloud-image-20180613

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 396.26
- ▶ Docker CE: 18.03.1-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the NVIDIA driver to 396.26.

Known Issues

There are no known issues in this release.

Chapter 16. Version 18.05.0

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 384.125
- ▶ Docker CE: 18.03.1-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Includes Ubuntu 16.04 security updates
- ▶ Updated Docker CE to version 18.03.1-ce

Known Issues

There are no known issues in this release.

Chapter 17. Version 18.04.0

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 384.125
- ▶ Docker CE: 18.03.0-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the NVIDIA Driver to version 384.125
- ▶ Updated Docker CE to version 18.03.0-ce

Known Issues

There are no known issues in this release.

Chapter 18. Version 18.03.0

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 384.111
- ▶ Docker CE: 17.12.1-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Known Issues

There are no known issues in this release.

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