



NVIDIA GPU Cloud Image for Microsoft Azure

Release Notes

Table of Contents

Chapter 1. NVIDIA GPU Cloud Image Overview.....	1
Chapter 2. Version 20.06.3.....	2
2.1. Known Issues.....	2
2.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously.....	3
Chapter 3. Version 20.03.1.....	4
3.1. Known Issues.....	4
3.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously.....	5
Chapter 4. Version 19.11.3.....	6
4.1. Known Issues.....	6
4.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously.....	7
Chapter 5. Version 19.10.2.....	8
5.1. Known Issues.....	8
5.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously.....	9
Chapter 6. Version 19.08.1.....	10
6.1. Known Issues.....	10
6.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously.....	11
Chapter 7. Version 19.07.1.....	12
7.1. Known Issues.....	12
7.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously.....	13
Chapter 8. Version 19.05.1.....	14
8.1. Known Issues.....	14
8.1.1. Installing GPU drivers on the VM via a CUDA Install Succeeds Erroneously.....	15
Chapter 9. Version 19.03.0.....	16
Chapter 10. Version 19.02.0.....	17
Chapter 11. Version 19.01.0.....	18
Chapter 12. Version 18.11.1.....	19
Chapter 13. Version 18.09.1.....	20
Chapter 14. Version 18.08.0.....	21

Chapter 1. NVIDIA GPU Cloud Image Overview

NVIDIA makes available on the Microsoft Azure platform a customized machine image based on the NVIDIA® Tesla Volta™ and Pascal™ GPUs. Running NVIDIA GPU Cloud containers on this instance provides optimum performance for deep learning, machine learning, and HPC workloads.

See the [Using NGC with Azure 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-2020.06.29`
- ▶ TensorFlow from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-tensorflow-2020.06.29`
- ▶ PyTorch from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-pytorch-2020.06.29`

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>`
- ▶ TensorFlow container (TensorFlow from NVIDIA image): `nvcr.io/nvidia/tensorflow:20.06-tf1-py3`, `nvcr.io/nvidia/tensorflow:20.06-tf2-py3`
- ▶ PyTorch container (PyTorch from NVIDIA image): `nvcr.io/nvidia/pytorch:20.06-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-2020.03.24`
- ▶ TensorFlow from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-tensorflow-2020.03.24`
- ▶ PyTorch from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-pytorch-2020.03.24`

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>`
- ▶ TensorFlow container (TensorFlow from NVIDIA image): `nvcr.io/nvidia/pytorch:20.02-tf1-py3`, `nvcr.io/nvidia/pytorch:20.02-tf2-py3`
- ▶ PyTorch container (PyTorch from NVIDIA image): `nvcr.io/nvidia/tensorflow:20.02-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-2019.11.14`
- ▶ TensorFlow from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-tensorflow-2019.11.14`
- ▶ PyTorch from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-pytorch-2019.11.14`

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>`
- ▶ TensorFlow container (TensorFlow from NVIDIA image): `nvcr.io/nvidia/tensorflow:19.10-py3`
- ▶ PyTorch container (PyTorch from NVIDIA image): `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-2019.10.02`
- ▶ TensorFlow from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-tensorflow-2019.10.02`
- ▶ PyTorch from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-pytorch-2019.10.02`

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
- ▶ TensorFlow container (TensorFlow from NVIDIA image): `nvcr.io/nvidia/tensorflow:19.09-py3`
- ▶ PyTorch container (PyTorch from NVIDIA image): `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 19.08.1

Image Name

- ▶ NGC Image: `NVIDIA-GPU-Cloud-Image-2019.07.22`
- ▶ TensorFlow from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-tensorflow-2019.07.22`
- ▶ PyTorch from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-pytorch-2019.07.22`

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
- ▶ TensorFlow container (TensorFlow from NVIDIA image): `nvcr.io/nvidia/tensorflow:19.06-py3`
- ▶ PyTorch container (PyTorch from NVIDIA image): `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 19.07.1

Image Name

- ▶ NGC Image: `NVIDIA-GPU-Cloud-Image-2019.07.10`
- ▶ TensorFlow from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-tensorflow-2019.07.10`
- ▶ PyTorch from NVIDIA Image: `NVIDIA-GPU-Cloud-Image-pytorch-2019.07.10`

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
- ▶ TensorFlow container (TensorFlow from NVIDIA image): `nvcr.io/nvidia/tensorflow:19.06-py3`
- ▶ PyTorch container (PyTorch from NVIDIA image): `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-2019.05.22
- ▶ TensorFlow from NVIDIA Image: NVIDIA-GPU-Cloud-Image-tensorflow-2019.05.22
- ▶ PyTorch from NVIDIA Image: NVIDIA-GPU-Cloud-Image-pytorch-2019.05.22

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
- ▶ TensorFlow container (TensorFlow from NVIDIA image): `nvcr.io/nvidia/tensorflow:19.04-py3`
- ▶ PyTorch container (PyTorch from NVIDIA image): `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

- ▶ Initial release of the PyTorch from NVIDIA and TensorFlow from NVIDIA images
- ▶ Updated the NVIDIA Driver to 418.67
- ▶ Updated Docker 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-2019.03.18`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 418.40.04
- ▶ Docker CE: 18.09.2-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the NVIDIA Driver to 418.40.04
- ▶ Updated Docker to 18.09.2-ce

Known Issues

There are no known issues in this release.

Chapter 10. Version 19.02.0

Image Name

- ▶ NGC Image: `NVIDIA-GPU-Cloud-Image-2019.02.28`

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 410.104
- ▶ Docker CE: 18.09.1-ce
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the NVIDIA Driver to 410.104
- ▶ Updated Docker to 18.09.1-ce

Known Issues

There are no known issues in this release.

Chapter 11. Version 19.01.0

Image Name

NVIDIA-GPU-Cloud-Image-20190104

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 18.04 LTS
- ▶ NVIDIA Driver: 410.79
- ▶ Docker CE: 18.06.1
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated the Ubuntu Server to 18.04 LTS.

Known Issues

There are no known issues in this release.

Chapter 12. Version 18.11.1

Image Name

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 NVIDIA driver to Release 410 version 410.79.

Known Issues

There are no known issues in this release.

Chapter 13. Version 18.09.1

Image Name

NVIDIA GPU Cloud image 18.09.1

Contents of the NVIDIA GPU Cloud Image

- ▶ Ubuntu Server: 16.04 LTS
- ▶ NVIDIA Driver: 410.48
- ▶ Docker CE: 18.06.1
- ▶ NVIDIA Container Runtime for Docker: (nvidia-docker2) v2.0.3

Key Changes

- ▶ Updated 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 14. Version 18.08.0

Image Name

NVIDIA GPU Cloud image 18.08.0

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

- ▶ Initial Release

Known Issues

There are no known issues in this release.

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