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Chapter 1.
NVIDIA GPU CLOUD MACHINE IMAGE OVERVIEW

NVIDIA makes available on the Alibaba 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 Alibaba Cloud Setup Guide for instructions on setting up and using the VMI.
Chapter 2.
VERSION 20.03.0

Image Name

- NGC Image: **NVIDIA-GPU-Cloud-Image-20.03.0-2020.03.02**
- NGC with TensorFlow Image: **nvidia-gpu-cloud-image-tensorflow-20.03.0-2020.03.02**
- NGC with PyTorch Image: **nvidia-gpu-cloud-image-pytorch-20.03.0-2020.03.02**

Contents of the NVIDIA GPU Cloud Virtual Machine 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>`


Key Changes

- Updated Docker-CE to 19.03.6
- Updated NVIDIA Driver to 440.64.01

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 19.11.3

Image Name

- NGC Image: NVIDIA-GPU-Cloud-Image-19.11.3-2019.11.14
- NGC with TensorFlow Image: nvidia-gpu-cloud-image-tensorflow-19.11.3-2019.11.14
- NGC with PyTorch Image: nvidia-gpu-cloud-image-pytorch-19.11.3-2019.11.14

Contents of the NVIDIA GPU Cloud Virtual Machine 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>`


Key Changes

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

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 19.10.2

Image Name

- NGC Image: NVIDIA-GPU-Cloud-Image-19.10.2-2019.11.01
- NGC with TensorFlow Image: nvidia-gpu-cloud-image-tensorflow-19.10.2-2019.11.01
- NGC with PyTorch Image: nvidia-gpu-cloud-image-pytorch-19.10.2-2019.11.01

Contents of the NVIDIA GPU Cloud Virtual Machine Image

- Ubuntu Server: 18.04 LTS
- NVIDIA Driver: 418.87.01
- Docker CE: 19.03.2-ce
- NVIDIA Container Toolkit v1.0.5-1
- PyTorch container (NGC with PyTorch image): nvcr.io/nvidia/pytorch:19.09-py3

Key Changes

- Updated NVIDIA Driver to version 418.87.01
- 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>`
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 19.08.1

Image Name
NVIDIA-GPU-Cloud-Image-19.08.1-2019.07.22

Contents of the NVIDIA GPU Cloud Virtual Machine 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

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

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 19.07.0

Image Name

NVIDIA-GPU-Cloud-Image-19.07.0-2019.06.28

Contents of the NVIDIA GPU Cloud Virtual Machine 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

Key Changes

- Incorporates updated Ubuntu kernel to address a security update.
- Updated Docker-CE to 18.09.7: Incorporates security update.
- Incorporates cloud-init fix to allow updating older images to the latest kernel without user prompts.

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 19.05.1

Image Name

NVIDIA-GPU-Cloud-Image-19.05.1-2019.05.22

Contents of the NVIDIA GPU Cloud Virtual Machine 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

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 NVIDIA Driver to 418.67
- Updated Docker to 18.09.4-ce

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 19.03.1

Image Name

NVIDIA-GPU-Cloud-Image-19.03.0-2019.03.18

Contents of the NVIDIA GPU Cloud Virtual Machine 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 9.
VERSION 19.02.1

Image Name

NVIDIA-GPU-Cloud-Image-19.02.1-2019.02.11

Contents of the NVIDIA GPU Cloud Virtual Machine Image

- Ubuntu Server: 16.04 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 10.
VERSION 19.01.1

Image Name
NVIDIA-GPU-Cloud-Image-19.01.1-2019.01.08

Contents of the NVIDIA GPU Cloud Virtual Machine 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

Known Issues
There are no known issues in this release.
Chapter 11.
VERSION 18.11.1

Image Name
NVIDIA-GPU-Cloud-Image-18.11.1-2018.11.21

Contents of the NVIDIA GPU Cloud Virtual Machine 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 410.79.

Known Issues
There are no known issues in this release.
Chapter 12.  
VERSION 18.09.1

Image Name
NVIDIA-GPU-Cloud-Image-18.09.1

Contents of the NVIDIA GPU Cloud Virtual Machine 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 the NVIDIA driver to 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-18.08.1

Contents of the NVIDIA GPU Cloud Virtual Machine 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 18.07.1

Image Name
NVIDIA-GPU-Cloud-Image-18.07.1-2018.07.16

Contents of the NVIDIA GPU Cloud Virtual Machine 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 18.06.1

Image Name
NVIDIA-GPU-Cloud-Image-18.06.1-2018.06.14

Contents of the NVIDIA GPU Cloud Virtual Machine 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 18.05.1

Contents of the NVIDIA GPU Cloud Virtual Machine 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 18.04.1

Contents of the NVIDIA GPU Cloud Virtual Machine 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 Virtual Machine Image

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

Known Issues

There are no known issues in this release.
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