



NVIDIA Deep Learning GPU Training System (DIGITS)

Release Notes

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Chapter 1. DIGITS Overview

The [Deep Learning GPU Training System™ \(DIGITS\)](#) puts the power of deep learning into the hands of engineers and data scientists.

DIGITS can be used to rapidly train highly accurate deep neural network (DNNs) for image classification, segmentation and object detection tasks. DIGITS simplifies common deep learning tasks such as managing data, designing and training neural networks on multi-GPU systems, monitoring performance in real time with advanced visualizations, and selecting the best performing model from the results browser for deployment. DIGITS is completely interactive so that data scientists can focus on designing and training networks rather than programming and debugging.

See `/workspace/README.md` inside the container for information on customizing your DIGITS application. For more information about DIGITS, see:

- ▶ [DIGITS website](#)
- ▶ [DIGITS project](#)
- ▶ [nvidia-docker documentation](#)



Note: There may be slight variations between the [Dockerhub images](#) and this image.

This document describes the key features, software enhancements and improvements, any known issues, and how to run this application.

Chapter 2. Pulling A Container

About this task

Before you can pull a container from the NGC Registry, you must have Docker installed. For DGX users, this is explained in [Preparing to use NVIDIA Containers Getting Started Guide](#).

For users other than DGX, follow the NVIDIA® GPU Cloud™ (NGC) registry [installation documentation](#) based on your platform.

You must also have access and be logged into the NGC Registry as explained in the [NGC Getting Started Guide](#).

The deep learning frameworks are stored in the following repository where you can find the NGC Docker containers.

`nvcr.io/nvidia`

The deep learning framework containers are stored in the `nvcr.io/nvidia` repository.

Chapter 3. Ways To Run DIGITS

About this task

You can run DIGITS in the following ways:

1. [Running DIGITS](#)
2. [Running DIGITS from Developer Zone](#)
3. Docker[®]. For more information, see [DIGITS on GitHub](#).

3.1. Running DIGITS

Before you begin

Before you can run an NGC deep learning framework container, your Docker environment must support NVIDIA GPUs. To run a container, issue the appropriate command as explained in the [Running A Container](#) chapter in the *NVIDIA Containers And Frameworks User Guide* and specify the registry, repository, and tags.

About this task

On a system with GPU support for NGC containers, the following occurs when running a container:

- ▶ The Docker engine loads the image into a container which runs the software.
- ▶ You define the runtime resources of the container by including additional flags and settings that are used with the command. These flags and settings are described in [Running A Container](#).
- ▶ The GPUs are explicitly defined for the Docker container (defaults to all GPUs, but can be specified using `NVIDIA_VISIBLE_DEVICES` environment variable). Starting in Docker 19.03, follow the steps as outlined below. For more information, refer to the [nvidia-docker documentation here](#).

The method implemented in your system depends on the DGX OS version installed (for DGX systems), the specific NGC Cloud Image provided by a Cloud Service Provider, or the software

that you have installed in preparation for running NGC containers on TITAN PCs, Quadro PCs, or vGPUs.

Procedure

1. Issue the command for the applicable release of the container that you want. The following command assumes you want to pull the latest container.
2. Open a command prompt and paste the pull command. The pulling of the container image begins. Ensure the pull completes successfully before proceeding to the next step.
3. Run the application.

If you have Docker 19.03 or later, a typical command to launch the container is:

```
docker pull nvcr.io/nvidia/digits:21.09-tensorflow
```

```
docker run --gpus all -it --rm -v local_dir:container_dir nvcr.io/nvidia/digits:<xx.xx>-<framework>
```

If you have Docker 19.02 or earlier, a typical command to launch the container is:

```
nvidia-docker run -it --rm -v local_dir:container_dir nvcr.io/nvidia/digits:<xx.xx>-<framework>
```

- a). To run the server as a daemon and expose port 5000 in the container to port 8888 on your host:

```
docker run --gpus all --name digits -d -p 8888:5000
nvcr.io/nvidia/digits:<xx.xx>-<framework>
```



Note: DIGITS 6.1.1 uses port 5000 by default.

- b). To mount one local directory containing your data (read-only), and another for writing your DIGITS jobs:

```
docker run --gpus all --name digits -d -p 8888:5000 -v
/home/username/data:/data -v /home/username/digits-
jobs:/workspace/jobs nvcr.io/nvidia/digits:<xx.xx>-<framework>
```



Note: In order to share data between ranks, NVIDIA® Collective Communications Library™ (NCCL) may require shared system memory for IPC and pinned (page-locked) system memory resources. The operating system's limits on these resources may need to be increased accordingly. Refer to your system's documentation for details.

In particular, Docker containers default to limited shared and pinned memory resources. When using NCCL inside a container, it is recommended that you increase these resources by issuing:

```
--shm-size=1g --ulimit memlock=-1
```

in the command line to:

```
docker run --gpus all
```

3.2. Running DIGITS from Developer Zone

About this task

For more information about downloading, running, and using DIGITS, see: [NVIDIA DIGITS: Interactive Deep Learning GPU Training System](#).

Chapter 4. DIGITS Release 21.09

The NVIDIA application of DIGITS, release 21.09, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.09-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.4.2](#)
- ▶ [cuBLAS 11.6.1.51](#)
- ▶ [NVIDIA cuDNN 8.2.4.15](#)
- ▶ [NVIDIA NCCL 2.11.4](#) (optimized for [NVLink™](#))
- ▶ [rdma-core 36.0](#)
- ▶ [OpenMPI 4.1.1+](#)
- ▶ OpenUCX 1.11.0rc1
- ▶ GDRCopy 2.3
- ▶ NVIDIA HPC-X 2.9
- ▶ [Nsight Systems 2021.3.1.57](#)
- ▶ [TensorRT 8.0.3](#)
- ▶ [TensorFlow 1.15.5](#)

Driver Requirements

Release 21.09 is based on [NVIDIA CUDA 11.4.2](#), which requires [NVIDIA Driver](#) release 470 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440), 450.51 (or later R450), or 460.27 (or later R460). The CUDA driver's compatibility package only

supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.09 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

After release 21.09, future releases of the DIGITS container will be paused for approximately 6 months.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.09 is based on [DIGITS version 6.1.1](#)
- ▶ Ubuntu 20.04 with August 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.09	20.04	NVIDIA CUDA 11.4.2	6.1.1	TensorRT 8.0.3
21.08		NVIDIA CUDA 11.4.1		TensorRT 8.0.1.6
21.07		NVIDIA CUDA 11.4.0		
21.06		NVIDIA CUDA 11.3.1		TensorRT 7.2.3.4
21.05		NVIDIA CUDA 11.3.0		
21.04				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT				
21.03	18.04	NVIDIA CUDA 11.2.1		TensorRT 7.2.2.3				
21.02		NVIDIA CUDA 11.2.0						
20.12		NVIDIA CUDA 11.1.1		TensorRT 7.2.2.1				
20.11		NVIDIA CUDA 11.1.0		TensorRT 7.2.1				
20.10								
20.09						NVIDIA CUDA 11.0.3	TensorRT 7.1.3	
20.08								
20.07								
20.06						NVIDIA CUDA 11.0.167	TensorRT 7.1.2	
20.03								
20.02								
20.01								
19.12						TensorRT 6.0.1		
19.11								
19.10								
19.09								
19.08	NVIDIA CUDA 10.1.243							
			TensorRT 5.1.5					

Known Issues

None.

Chapter 5. DIGITS Release 21.08

The NVIDIA application of DIGITS, release 21.08, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.08-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.4.1](#)
- ▶ [cuBLAS 11.5.4](#)
- ▶ [NVIDIA cuDNN 8.2.2.26](#)
- ▶ [NVIDIA NCCL 2.10.3](#) (optimized for [NVLink™](#))
- ▶ [rdma-core 36.0](#)
- ▶ [OpenMPI 4.1.1+](#)
- ▶ OpenUCX 1.11.0rc1
- ▶ GDRCopy 2.2
- ▶ NVIDIA HPC-X 2.9
- ▶ [Nsight Systems 2021.2.4.12](#)
- ▶ [TensorRT 8.0.1.6](#)
- ▶ [TensorFlow 1.15.5](#)

Driver Requirements

Release 21.08 is based on [NVIDIA CUDA 11.4.1](#), which requires [NVIDIA Driver](#) release 470 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440), 450.51 (or later R450), or 460.27 (or later R460). The CUDA driver's compatibility package only

supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.08 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 21.08 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.08 is based on [DIGITS version 6.1.1](#)
- ▶ Ubuntu 20.04 with July 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.08	20.04	NVIDIA CUDA 11.4.1	6.1.1	TensorRT 8.0.1.6
21.07		NVIDIA CUDA 11.4.0		
21.06		NVIDIA CUDA 11.3.1		TensorRT 7.2.3.4
21.05		NVIDIA CUDA 11.3.0		
21.04		NVIDIA CUDA 11.3.0		
21.03		NVIDIA CUDA 11.2.1		TensorRT 7.2.2.3

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.02	18.04	NVIDIA CUDA 11.2.0		
20.12		NVIDIA CUDA 11.1.1		TensorRT 7.2.2.1
20.11		NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10		NVIDIA CUDA 11.0.3		TensorRT 7.1.3
20.09				
20.08				
20.07		NVIDIA CUDA 11.0.194		
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				
19.12				
19.11		NVIDIA CUDA 10.1.243		TensorRT 6.0.1
19.10				
19.09				
19.08	TensorRT 5.1.5			

Known Issues

None.

Chapter 6. DIGITS Release 21.07

The NVIDIA application of DIGITS, release 21.07, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.07-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.4.0](#)
- ▶ [cuBLAS 11.5.2.43](#)
- ▶ [NVIDIA cuDNN 8.2.2.26](#)
- ▶ [NVIDIA NCCL 2.10.3](#) (optimized for [NVLink™](#))
- ▶ [rdma-core 32.1](#)
- ▶ [OpenMPI 4.1.1rc1](#)
- ▶ [OpenUCX 1.10.1](#)
- ▶ [GDRCopy 2.2](#)
- ▶ [NVIDIA HPC-X 2.8.2rc3](#)
- ▶ [Nsight Compute 2021.1.0.18](#)
- ▶ [Nsight Systems 2021.2.4.12](#)
- ▶ [TensorRT 8.0.1.6](#)
- ▶ [TensorFlow 1.15.5](#)

Driver Requirements

Release 21.07 is based on [NVIDIA CUDA 11.4.0](#), which requires [NVIDIA Driver](#) release 470 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440), 450.51

(or later R450), or 460.27 (or later R460). The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.07 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 21.07 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.07 is based on [DIGITS version 6.1.1](#)
- ▶ Ubuntu 20.04 with June 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.07	20.04	NVIDIA CUDA 11.4.0	6.1.1	TensorRT 8.0.1.6
21.06		NVIDIA CUDA 11.3.1		TensorRT 7.2.3.4
21.05		NVIDIA CUDA 11.3.0		
21.04				
21.03		NVIDIA CUDA 11.2.1		TensorRT 7.2.2.3
21.02		NVIDIA CUDA 11.2.0		

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.12		NVIDIA CUDA 11.1.1		TensorRT 7.2.2.1
20.11	18.04	NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10				
20.09		NVIDIA CUDA 11.0.3		TensorRT 7.1.3
20.08				
20.07				
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03				
20.02				
20.01				
19.12				
19.11		NVIDIA CUDA 10.1.243		TensorRT 6.0.1
19.10				
19.09				
19.08				

Known Issues

The 21.07 release includes libsystemd and libudev versions that have a known vulnerability that was discovered late in our QA process. See [CVE-2021-33910](#) for details. This will be fixed in the next release.

Chapter 7. DIGITS Release 21.06

The NVIDIA application of DIGITS, release 21.06, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.06-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.3.1](#)
- ▶ [cuBLAS 11.5.1.109](#)
- ▶ [NVIDIA cuDNN 8.2.1](#)
- ▶ [NVIDIA NCCL 2.9.9](#) (optimized for [NVLink™](#))
- ▶ [rdma-core 32.1](#)
- ▶ [OpenMPI 4.1.1rc1](#)
- ▶ [OpenUCX 1.10.1](#)
- ▶ [GDRCopy 2.2](#)
- ▶ [NVIDIA HPC-X 2.8.2rc3](#)
- ▶ [Nsight Compute 2021.1.0.18](#)
- ▶ [Nsight Systems 2021.2.1.58](#)
- ▶ [TensorRT 7.2.3.4](#)
- ▶ [TensorFlow 1.15.5](#)

Driver Requirements

Release 21.06 is based on [NVIDIA CUDA 11.3.1](#), which requires [NVIDIA Driver](#) release 465.19.01 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440),

450.51 (or later R450), or 460.27 (or later R460). The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.06 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 21.06 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.06 is based on [DIGITS version 6.1.1](#)
- ▶ Ubuntu 20.04 with May 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.06	20.04	NVIDIA CUDA 11.3.1	6.1.1	TensorRT 7.2.3.4
21.05		NVIDIA CUDA 11.3.0		
21.04		NVIDIA CUDA 11.2.1		
21.03		NVIDIA CUDA 11.2.0		
21.02		NVIDIA CUDA 11.1.1		TensorRT 7.2.2.1
20.12				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.11	18.04	NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10				
20.09		NVIDIA CUDA 11.0.3		TensorRT 7.1.3
20.08				
20.07				
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				
19.12		NVIDIA CUDA 10.1.243		TensorRT 6.0.1
19.11				
19.10				
19.09				
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 8. DIGITS Release 21.05

The NVIDIA application of DIGITS, release 21.05, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.05-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.3.0](#)
- ▶ [cuBLAS 11.5.1.101](#)
- ▶ [NVIDIA cuDNN 8.2.0.51](#)
- ▶ [NVIDIA NCCL 2.9.8](#) (optimized for [NVLink™](#))
- ▶ [rdma-core 32.1](#)
- ▶ [OpenMPI 4.1.1rc1](#)
- ▶ OpenUCX 1.10.0
- ▶ GDRCopy 2.2
- ▶ NVIDIA HPC-X 2.8.2rc3
- ▶ [Nsight Compute 2021.1.0.18](#)
- ▶ [Nsight Systems 2021.1.3.14](#)
- ▶ [TensorRT 7.2.3.4](#)
- ▶ [TensorFlow 1.15.5](#)

Driver Requirements

Release 21.05 is based on [NVIDIA CUDA 11.3.0](#), which requires [NVIDIA Driver](#) release 465.19.01 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440),

450.51 (or later R450), or 460.27 (or later R460). The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.05 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 21.05 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.05 is based on [DIGITS version 6.1.1](#)
- ▶ Ubuntu 20.04 with April 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.05	20.04	NVIDIA CUDA 11.3.0	6.1.1	TensorRT 7.2.3.4
21.04				
21.03		NVIDIA CUDA 11.2.1		TensorRT 7.2.2.3
21.02		NVIDIA CUDA 11.2.0		
20.12		NVIDIA CUDA 11.1.1		TensorRT 7.2.2.1
20.11	18.04	NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT				
20.09		NVIDIA CUDA 11.0.3		TensorRT 7.1.3				
20.08								
20.07		NVIDIA CUDA 11.0.194						
20.06		NVIDIA CUDA 11.0.167						
20.03		NVIDIA CUDA 10.2.89					TensorRT 7.0.0	
20.02								
20.01								
19.12								TensorRT 6.0.1
19.11								
19.10								
19.09		NVIDIA CUDA 10.1.243						
19.08								
						TensorRT 5.1.5		

Known Issues

There are no known issues in this release.

Chapter 9. DIGITS Release 21.04

The NVIDIA application of DIGITS, release 21.04, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.04-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.3.0](#)
- ▶ [cuBLAS 11.5.1.101](#)
- ▶ [NVIDIA cuDNN 8.2.0.41](#)
- ▶ [NVIDIA NCCL 2.9.6](#) (optimized for [NVLink™](#))
- ▶ [rdma-core 32.1](#)
- ▶ [OpenMPI 4.1.1rc1](#)
- ▶ OpenUCX 1.10.0
- ▶ GDRCopy 2.2
- ▶ NVIDIA HPC-X 2.8.2rc3
- ▶ [Nsight Compute 2021.1.0.18](#)
- ▶ [Nsight Systems 2021.1.3.14](#)
- ▶ [TensorRT 7.2.3.4](#)
- ▶ [TensorFlow 1.15.5](#)

Driver Requirements

Release 21.04 is based on [NVIDIA CUDA 11.3.0](#), which requires [NVIDIA Driver](#) release 465.19.01 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440),

450.51 (or later R450), or 460.27 (or later R460). The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.04 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 21.04 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.04 is based on [DIGITS version 6.1.1](#)
- ▶ Ubuntu 20.04 with March 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.04	20.04	NVIDIA CUDA 11.3.0	6.1.1	TensorRT 7.2.3.4
21.03		NVIDIA CUDA 11.2.1		TensorRT 7.2.2.3
21.02		NVIDIA CUDA 11.2.0		
20.12		NVIDIA CUDA 11.1.1		TensorRT 7.2.2.1
20.11	18.04	NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT		
20.09		NVIDIA CUDA 11.0.3		TensorRT 7.1.3		
20.08						
20.07		NVIDIA CUDA 11.0.194				
20.06		NVIDIA CUDA 11.0.167				
20.03		NVIDIA CUDA 10.2.89			TensorRT 7.0.0	
20.02						
20.01						
19.12						TensorRT 6.0.1
19.11						
19.10						
19.09						
19.08		NVIDIA CUDA 10.1.243		TensorRT 5.1.5		

Known Issues

There are no known issues in this release.

Chapter 10. DIGITS Release 21.03

The NVIDIA application of DIGITS, release 21.03, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.03-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.2.1](#) including [cuBLAS 11.4.1.1026](#)
- ▶ [NVIDIA cuDNN 8.1.1](#)
- ▶ [NVIDIA NCCL 2.8.4](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED 5.1](#)
- ▶ [OpenMPI 4.0.5](#)
- ▶ [Nsight Compute 2020.3.0.18](#)
- ▶ [Nsight Systems 2020.4.3.7](#)
- ▶ [TensorFlow 1.15.5](#)
- ▶ [TensorRT 7.2.2.3](#)

Driver Requirements

Release 21.03 is based on [NVIDIA CUDA 11.2.1](#), which requires [NVIDIA Driver](#) release 460.32.03 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440), 450.51 (or later R450). The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.03 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 21.03 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.03 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA CUDA 11.2.1](#) including [cuBLAS 11.4.1.1026](#)
- ▶ The latest version of [NVIDIA cuDNN 8.1.1](#)
- ▶ Ubuntu 20.04 with February 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.03	20.04	NVIDIA CUDA 11.2.1	6.1.1	TensorRT 7.2.2.3
21.02		NVIDIA CUDA 11.2.0		
20.12	18.04	NVIDIA CUDA 11.1.1		TensorRT 7.2.2.1
20.11		NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10		NVIDIA CUDA 11.0.3		TensorRT 7.1.3
20.09				
20.08				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.07		NVIDIA CUDA 11.0.194		
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				
19.12				TensorRT 6.0.1
19.11				
19.10		NVIDIA CUDA 10.1.243		
19.09				
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 11. DIGITS Release 21.02

The NVIDIA application of DIGITS, release 21.02, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `21.02-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.2.0](#) including [cuBLAS 11.3.1](#)
- ▶ [NVIDIA cuDNN 8.1.0](#)
- ▶ [NVIDIA NCCL 2.8.4](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED 5.1](#)
- ▶ [OpenMPI 4.0.5](#)
- ▶ [Nsight Compute 2020.3.0.18](#)
- ▶ [Nsight Systems 2020.4.3.7](#)
- ▶ [TensorFlow 1.15.5](#)
- ▶ [TensorRT 7.2.2](#)

Driver Requirements

Release 21.02 is based on [NVIDIA CUDA 11.2.0](#), which requires [NVIDIA Driver](#) release 460.27.04 or later. However, if you are running on Data Center GPUs (formerly Tesla), for example, T4, you may use NVIDIA driver release 418.40 (or later R418), 440.33 (or later R440), 450.51 (or later R450). The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#) and [NVIDIA CUDA and Drivers Support](#).

GPU Requirements

Release 21.02 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and NVIDIA Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 21.02 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 21.02 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA CUDA 11.2.0](#) including [cuBLAS 11.3.1](#)
- ▶ The latest version of [NVIDIA cuDNN 8.1.0](#)
- ▶ The latest version of [NVIDIA NCCL 2.8.4](#) (optimized for [NVLink™](#))
- ▶ The latest version of [Nsight Compute 2020.3.0.18](#)
- ▶ The latest version of [Nsight Systems 2020.4.3.7](#)
- ▶ The latest version of [TensorRT 7.2.2](#)
- ▶ Ubuntu 20.04 with January 2021 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
21.02	20.04	NVIDIA CUDA 11.2.0	6.1.1	TensorRT 7.2.2
20.12		NVIDIA CUDA 11.1.1		
20.11	18.04	NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT	
20.09		NVIDIA CUDA 11.0.3		TensorRT 7.1.3	
20.08					
20.07		NVIDIA CUDA 11.0.194			
20.06		NVIDIA CUDA 11.0.167			
20.03		NVIDIA CUDA 10.2.89			TensorRT 7.0.0
20.02					
20.01					
19.12		NVIDIA CUDA 10.1.243			TensorRT 6.0.1
19.11					
19.10					
19.09					
19.08					TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 12. DIGITS Release 21.01

The NVIDIA container image release for DIGITS 21.01 has been canceled. The next release will be the 21.02 release which is expected to be released at the end of February.

Chapter 13. DIGITS Release 20.12

The NVIDIA application of DIGITS, release 20.12, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `20.12-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 20.04](#) including [Python 3.8](#)
- ▶ [NVIDIA CUDA 11.1.1](#) including [cuBLAS 11.3.0](#)
- ▶ [NVIDIA cuDNN 8.0.5](#)
- ▶ [NVIDIA NCCL 2.8.3](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED 5.1](#)
- ▶ [OpenMPI 4.0.5](#)
- ▶ [Nsight Compute 2020.2.1.8](#)
- ▶ [Nsight Systems 2020.3.4.32](#)
- ▶ [TensorFlow 1.15.4](#)
- ▶ [TensorRT 7.2.2](#)

Driver Requirements

Release 20.12 is based on [NVIDIA CUDA 11.1.1](#), which requires [NVIDIA Driver](#) release 455 or later. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 418.xx, 440.30, or 450.xx. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.12 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 20.12 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.12 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA CUDA 11.1.1](#) including [cuBLAS 11.3.0](#)
- ▶ The latest version of [NVIDIA cuDNN 8.0.5](#)
- ▶ The latest version of [NVIDIA NCCL 2.8.3](#) (optimized for [NVLink™](#))
- ▶ The latest version of [Nsight Compute 2020.2.1.8](#)
- ▶ The latest version of [TensorRT 7.2.2](#)
- ▶ Ubuntu 20.04 with November 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.12	20.04	NVIDIA CUDA 11.1.1	6.1.1	TensorRT 7.2.2
20.11	18.04	NVIDIA CUDA 11.1.0		TensorRT 7.2.1
20.10		NVIDIA CUDA 11.0.3		TensorRT 7.1.3
20.09		NVIDIA CUDA 11.0.3		
20.08		NVIDIA CUDA 11.0.194		
20.07		NVIDIA CUDA 11.0.194		

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				
19.12		NVIDIA CUDA 10.1.243		TensorRT 6.0.1
19.11				
19.10				
19.09				TensorRT 5.1.5
19.08				

Known Issues

There are no known issues in this release.

Chapter 14. DIGITS Release 20.11

The NVIDIA application of DIGITS, release 20.11, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `20.11-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 11.1.0](#) including [cuBLAS 11.2.1](#)
- ▶ [NVIDIA cuDNN 8.0.4](#)
- ▶ [NVIDIA NCCL 2.8.2](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED 5.1](#)
- ▶ [OpenMPI 4.0.5](#)
- ▶ [Nsight Compute 2020.2.0.18](#)
- ▶ [Nsight Systems 2020.3.4.32](#)
- ▶ [TensorFlow 1.15.4](#)
- ▶ [TensorRT 7.2.1](#)

Driver Requirements

Release 20.11 is based on [NVIDIA CUDA 11.1.0](#), which requires [NVIDIA Driver](#) release 455 or later. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 418.xx, 440.30, or 450.xx. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.11 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 20.11 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.11 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA NCCL 2.8.2](#)
- ▶ The latest version of [TensorFlow 1.15.4](#)
- ▶ Ubuntu 18.04 with October 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT	
20.11	18.04	NVIDIA CUDA 11.1.0	6.1.1	TensorRT 7.2.1	
20.10					
20.09		NVIDIA CUDA 11.0.3			TensorRT 7.1.3
20.08					
20.07		NVIDIA CUDA 11.0.194			
20.06		NVIDIA CUDA 11.0.167			TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89			TensorRT 7.0.0
20.02					

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.01				
19.12				TensorRT 6.0.1
19.11				
19.10		NVIDIA CUDA		
19.09		10.1.243		
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 15. DIGITS Release 20.10

The NVIDIA application of DIGITS, release 20.10, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `20.10-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 11.1.0](#) including [cuBLAS 11.2.1](#)
- ▶ [NVIDIA cuDNN 8.0.4](#)
- ▶ [NVIDIA NCCL 2.7.8](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.6](#)
- ▶ [Nsight Compute 2020.2.0.18](#)
- ▶ [Nsight Systems 2020.3.4.32](#)
- ▶ [TensorFlow 1.15.4](#)
- ▶ [TensorRT 7.2.1](#)

Driver Requirements

Release 20.10 is based on [NVIDIA CUDA 11.1.0](#), which requires [NVIDIA Driver](#) release 455 or later. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 418.xx, 440.30, or 450.xx. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.10 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 20.10 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.10 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA CUDA 11.1.0](#) including [cuBLAS 11.2.1](#)
- ▶ The latest version of [NVIDIA cuDNN 8.0.4](#)
- ▶ The latest version of [TensorFlow 1.15.4](#)
- ▶ The latest version of [TensorRT 7.2.1](#)
- ▶ The latest version of [Nsight Compute 2020.2.0.18](#)
- ▶ The latest version of [Nsight Systems 2020.3.4.32](#)
- ▶ Ubuntu 18.04 with September 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.10	18.04	NVIDIA CUDA 11.1.0	6.1.1	TensorRT 7.2.1
20.09		NVIDIA CUDA 11.0.3		TensorRT 7.1.3
20.08				
20.07		NVIDIA CUDA 11.0.194		

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				
19.12		NVIDIA CUDA 10.1.243		TensorRT 6.0.1
19.11				
19.10				
19.09				
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 16. DIGITS Release 20.09

The NVIDIA application of DIGITS, release 20.09, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `20.09-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 11.0.3](#) including [cuBLAS 11.2.0](#)
- ▶ [NVIDIA cuDNN 8.0.4](#)
- ▶ [NVIDIA NCCL 2.7.8](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.6](#)
- ▶ [Nsight Compute 2020.1.2.4](#)
- ▶ [Nsight Systems 2020.3.2.6](#)
- ▶ [TensorFlow 1.15.3](#)
- ▶ [TensorRT 7.1.3](#)

Driver Requirements

Release 20.09 is based on [NVIDIA CUDA 11.0.3](#), which requires [NVIDIA Driver](#) release 450 or later. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.09 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 20.09 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.09 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA cuDNN 8.0.4](#)
- ▶ Ubuntu 18.04 with August 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.09	18.04	NVIDIA CUDA 11.0.3	6.1.1	TensorRT 7.1.3
20.08				
20.07		NVIDIA CUDA 11.0.194		
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				
19.12				
19.11				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
19.10		NVIDIA CUDA		
19.09		10.1.243		
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 17. DIGITS Release 20.08

The NVIDIA application of DIGITS, release 20.08, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `20.08-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 11.0.3](#) including [cuBLAS 11.2.0](#)
- ▶ [NVIDIA cuDNN 8.0.2](#)
- ▶ [NVIDIA NCCL 2.7.8](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.6](#)
- ▶ [Nsight Compute 2020.1.2.4](#)
- ▶ [Nsight Systems 2020.3.2.6](#)
- ▶ [TensorFlow 1.15.3](#)
- ▶ [TensorRT 7.1.3](#)

Driver Requirements

Release 20.08 is based on [NVIDIA CUDA 11.0.3](#), which requires [NVIDIA Driver](#) release 450 or later. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.08 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 20.08 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.08 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA CUDA 11.0.3](#) including [cuBLAS 11.2.0](#)
- ▶ The latest version of [NVIDIA NCCL 2.7.8](#)
- ▶ The latest version of [NVIDIA cuDNN 8.0.2](#)
- ▶ The latest version of [OpenMPI 3.1.6](#)
- ▶ The latest version of [Nsight Compute 2020.1.2.4](#)
- ▶ The latest version of [Nsight Systems 2020.3.2.6](#)
- ▶ Ubuntu 18.04 with July 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.08	18.04	NVIDIA CUDA 11.0.3	6.1.1	TensorRT 7.1.3
20.07		NVIDIA CUDA 11.0.194		
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				
19.12		NVIDIA CUDA 10.1.243		TensorRT 6.0.1
19.11				
19.10				
19.09				
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 18. DIGITS Release 20.07

The NVIDIA application of DIGITS, release 20.07, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `20.07-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 11.0.194](#) including [cuBLAS 11.1.0.229](#)
- ▶ [NVIDIA cuDNN 8.0.1.13](#)
- ▶ [NVIDIA NCCL 2.7.6](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.6](#)
- ▶ [Nsight Compute 2020.1.1.8](#)
- ▶ [Nsight Systems 2020.3.2.6](#)
- ▶ [TensorFlow 1.15.3](#)
- ▶ [TensorRT 7.1.3](#)

Driver Requirements

Release 20.07 is based on [NVIDIA CUDA 11.0.167](#), which requires [NVIDIA Driver](#) release 450 or later. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.07 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 20.07 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.07 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA CUDA 11.0.194](#) including [cuBLAS 11.1.0.229](#)
- ▶ The latest version of [NVIDIA NCCL 2.7.6](#)
- ▶ The latest version of [NVIDIA cuDNN 8.0.1.13](#)
- ▶ The latest version of [OpenMPI 3.1.6](#)
- ▶ The latest version of [Nsight Compute 2020.1.1.8](#)
- ▶ The latest version of [Nsight Systems 2020.3.2.6](#)
- ▶ The latest version of [TensorRT 7.1.3](#)
- ▶ Ubuntu 18.04 with June 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.07	18.04	NVIDIA CUDA 11.0.194	6.1.1	TensorRT 7.1.3
20.06		NVIDIA CUDA 11.0.167		TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.01				
19.12				TensorRT 6.0.1
19.11				
19.10		NVIDIA CUDA		
19.09		10.1.243		
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 19. DIGITS Release 20.06

The NVIDIA application of DIGITS, release 20.06, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The following DIGITS container is available for this release based on the deep learning frameworks:

- ▶ Tag `20.06-tensorflow` includes the TensorFlow framework only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 11.0.167](#) including [cuBLAS 11.1.0.213](#)
- ▶ [NVIDIA cuDNN 8.0.1.13](#)
- ▶ [NVIDIA NCCL 2.7.5](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.6](#)
- ▶ [Nsight Compute 2020.1.0.33](#)
- ▶ [Nsight Systems 2020.2.5.8](#)
- ▶ [TensorFlow 1.15.2](#)
- ▶ [TensorRT 7.1.2](#)

Driver Requirements

Release 20.06 is based on [NVIDIA CUDA 11.0.167](#), which requires [NVIDIA Driver](#) release 450 or later. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.06 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, Turing, and Ampere Architecture GPU families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Announcement

Caffe is no longer supported. 20.06 and later releases are built only with TensorFlow.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.06 is based on [DIGITS version 6.1.1](#)
- ▶ The latest version of [NVIDIA CUDA 11.0.167](#) including [cuBLAS 11.1.0.213](#)
- ▶ The latest version of [NVIDIA NCCL 2.7.5](#)
- ▶ The latest version of [NVIDIA cuDNN 8.0.1.13](#)
- ▶ The latest version of [OpenMPI 3.1.6](#)
- ▶ The latest version of [Nsight Compute 2020.1.0.33](#)
- ▶ The latest version of [Nsight Systems 2020.2.5.8](#)
- ▶ The latest version of [TensorRT 7.1.2](#)
- ▶ Ubuntu 18.04 with May 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.06	18.04	NVIDIA CUDA 11.0.167	6.1.1	TensorRT 7.1.2
20.03		NVIDIA CUDA 10.2.89		TensorRT 7.0.0
20.02				
20.01				

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
19.12				TensorRT 6.0.1
19.11				
19.10		NVIDIA CUDA		
19.09		10.1.243		
19.08				TensorRT 5.1.5

Known Issues

There are no known issues in this release.

Chapter 20. DIGITS Release 20.03

The NVIDIA application of DIGITS, release 20.03, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks:

- ▶ Tag `20.03-tensorflow` includes the TensorFlow framework only.
- ▶ Tag `20.03-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 10.2.89](#) including [cuBLAS 10.2.2.89](#)
- ▶ [NVIDIA cuDNN 7.6.5](#)
- ▶ [NVIDIA NCCL 2.6.3](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.4](#)
- ▶ [Nsight Compute 2019.5.0](#)
- ▶ [Nsight Systems 2020.1.1](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.15.2](#)
- ▶ [TensorRT 7.0.0](#)

Driver Requirements

Release 20.03 is based on [NVIDIA CUDA 10.2.89](#), which requires [NVIDIA Driver](#) release 440.33.01. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 396, 384.111+, 410, 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.03 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.03 is based on [DIGITS version 6.1.1](#)
- ▶ Ubuntu 18.04 with February 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.03	18.04	NVIDIA CUDA 10.2.89	6.1.1	TensorRT 7.0.0
20.02	16.04			TensorRT 6.0.1
20.01				
19.12				
19.11				
19.10				
19.09		NVIDIA CUDA 10.1.243		TensorRT 5.1.5
19.08				

Known Issues

There are no known issues in this release.

Chapter 21. DIGITS Release 20.02

The NVIDIA application of DIGITS, release 20.02, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks:

- ▶ Tag `20.02-tensorflow` includes the TensorFlow framework only.
- ▶ Tag `20.02-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 10.2.89](#) including [cuBLAS 10.2.2.89](#)
- ▶ [NVIDIA cuDNN 7.6.5](#)
- ▶ [NVIDIA NCCL 2.5.6](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.4](#)
- ▶ [Nsight Compute 2019.5.0](#)
- ▶ [Nsight Systems 2020.1.1](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.15.0](#)
- ▶ [TensorRT 7.0.0](#)

Driver Requirements

Release 20.02 is based on [NVIDIA CUDA 10.2.89](#), which requires [NVIDIA Driver](#) release 440.33.01. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 396, 384.111+, 410, 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.02 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.02 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [Nsight Systems 2020.1.1](#)
- ▶ Ubuntu 18.04 with January 2020 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.02	18.04	NVIDIA CUDA 10.2.89	6.1.1	TensorRT 7.0.0
20.01	16.04			TensorRT 6.0.1
19.12				
19.11				
19.10				NVIDIA CUDA 10.1.243
19.09				
19.08				

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 22. DIGITS Release 20.01

The NVIDIA application of DIGITS, release 20.01, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `20.01-tensorflow` includes the TensorFlow framework only. Tag `20.01-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 10.2.89](#) including [cuBLAS 10.2.2.89](#)
- ▶ [NVIDIA cuDNN 7.6.5](#)
- ▶ [NVIDIA NCCL 2.5.6](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.4](#)
- ▶ [Nsight Compute 2019.5.0](#)
- ▶ [Nsight Systems 2019.6.1](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.15.0](#)
- ▶ [TensorRT 7.0.0](#)

Driver Requirements

Release 20.01 is based on [NVIDIA CUDA 10.1.243](#), which requires [NVIDIA Driver](#) release 440.33.01. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 396, 384.111+, 410, 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 20.01 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 20.01 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [TensorRT 7.0.0](#)
- ▶ Ubuntu 18.04 with December 2019 updates

NVIDIA DIGITS Container Versions

The following table shows what versions of Ubuntu, CUDA, DIGITS, and TensorRT are supported in each of the NVIDIA containers for DIGITS. For older container versions, refer to the [Frameworks Support Matrix](#).

Container Version	Ubuntu	CUDA Toolkit	DIGITS	TensorRT
20.01	18.04	NVIDIA CUDA 10.2.89	6.1.1	TensorRT 7.0.0
19.12	16.04			TensorRT 6.0.1
19.11				
19.10		NVIDIA CUDA 10.1.243		
19.09				
19.08		TensorRT 5.1.5		

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 23. DIGITS Release 19.12

The NVIDIA application of DIGITS, release 19.12, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.12-tensorflow` includes the TensorFlow framework only. Tag `19.12-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 3.6](#)
- ▶ [NVIDIA CUDA 10.2.89](#) including [cuBLAS 10.2.2.89](#)
- ▶ [NVIDIA cuDNN 7.6.5](#)
- ▶ [NVIDIA NCCL 2.5.6](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.4](#)
- ▶ [Nsight Compute 2019.5.0](#)
- ▶ [Nsight Systems 2019.6.1](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.15.0](#)
- ▶ [TensorRT 6.0.1](#)

Driver Requirements

Release 19.12 is based on [NVIDIA CUDA 10.1.243](#), which requires [NVIDIA Driver](#) release 418.xx. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 396, 384.111+, 410, 418.xx or 440.30. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.12 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.12 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [Python 3.6](#)
- ▶ Latest versions of [NVIDIA CUDA 10.2.89](#) including [cuBLAS 10.2.2.89](#)
- ▶ Latest version of [NVIDIA cuDNN 7.6.5](#)
- ▶ Latest version of [NVIDIA NCCL 2.5.6](#)
- ▶ Latest versions of [Nsight Compute 2019.5.0](#) and [Nsight Systems 2019.6.1](#)
- ▶ Latest version of [TensorFlow 1.15.0](#)
- ▶ DIGITS code migrated to be compatible with Python 3
- ▶ Ubuntu 18.04 with November 2019 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 24. DIGITS Release 19.10

The NVIDIA application of DIGITS, release 19.10, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.10-tensorflow` includes the TensorFlow framework only. Tag `19.10-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1.243](#) including [cuBLAS 10.2.1.243](#)
- ▶ [NVIDIA cuDNN 7.6.4](#)
- ▶ [NVIDIA NCCL 2.4.8](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.4](#)
- ▶ [Nsight Compute 2019.4.0](#)
- ▶ [Nsight Systems 2019.5.1](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.14.0](#)
- ▶ [TensorRT 6.0.1](#)

Driver Requirements

Release 19.10 is based on [NVIDIA CUDA 10.1.243](#), which requires [NVIDIA Driver](#) release 418.xx. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 396, 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.10 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.10 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA cuDNN 7.6.4](#)
- ▶ Latest version of [Nsight Systems 2019.5.1](#)
- ▶ Ubuntu 18.04 with September 2019 updates

Announcements

We will be migrating to Python 3 in a future DIGITS container release.

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 25. DIGITS Release 19.09

The NVIDIA application of DIGITS, release 19.09, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.09-tensorflow` includes the TensorFlow framework only. Tag `19.09-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1.243](#) including [cuBLAS 10.2.1.243](#)
- ▶ [NVIDIA cuDNN 7.6.3](#)
- ▶ [NVIDIA NCCL 2.4.8](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED](#)
- ▶ [OpenMPI 3.1.4](#)
- ▶ [Nsight Compute 2019.4.0](#)
- ▶ [Nsight Systems 2019.4.2](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.14.0](#)
- ▶ [TensorRT 6.0.1](#)

Driver Requirements

Release 19.09 is based on [NVIDIA CUDA 10.1.243](#), which requires [NVIDIA Driver](#) release 418.xx. However, if you are running on Tesla (for example, T4 or any other Tesla board), you may use NVIDIA driver release 396, 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.09 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.09 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA cuDNN 7.6.3](#)
- ▶ Latest version of [TensorRT 6.0.1](#)
- ▶ Latest versions of [Nsight Compute 2019.4.0](#) and [Nsight Systems 2019.4.2](#)
- ▶ Ubuntu 18.04 with August 2019 updates

Announcements

We will be migrating to Python 3 in a future DIGITS container release.

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 26. DIGITS Release 19.08

The NVIDIA application of DIGITS, release 19.08, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.08-tensorflow` includes the TensorFlow framework only. Tag `19.08-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1.243](#) including [cuBLAS 10.2.1.243](#)
- ▶ [NVIDIA cuDNN 7.6.2](#)
- ▶ [NVIDIA NCCL 2.4.8](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED +4.0](#)
- ▶ [OpenMPI 3.1.4](#)
- ▶ [Nsight Compute 10.1.168](#)
- ▶ [Nsight Systems 2019.3.7.9](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.14.0](#)
- ▶ [TensorRT 5.1.5](#)

Driver Requirements

Release 19.08 is based on [NVIDIA CUDA 10.1.243](#), which requires [NVIDIA Driver](#) release 418.87. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.08 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.08 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA CUDA 10.1.243](#) including [cuBLAS 10.2.1.243](#)
- ▶ Latest version of [NVIDIA cuDNN 7.6.2](#)
- ▶ Latest version of [NVIDIA NCCL 2.4.8](#)
- ▶ Latest version of [Nsight Systems 2019.3.7.9](#)
- ▶ Latest version of [MLNX_OFED +4.0](#)
- ▶ Latest version of [OpenMPI 3.1.4](#)
- ▶ Ubuntu 18.04 with July 2019 updates

Announcements

We will be migrating to Python 3 in a future DIGITS container release.

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 27. DIGITS Release 19.07

The NVIDIA application of DIGITS, release 19.07, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.07-tensorflow` includes the TensorFlow framework only. Tag `19.07-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 18.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1.168](#) including [cuBLAS 10.2.0.168](#)
- ▶ [NVIDIA cuDNN 7.6.1](#)
- ▶ [NVIDIA NCCL 2.4.7](#) (optimized for [NVLink™](#))
- ▶ [MLNX_OFED +3.4](#)
- ▶ [OpenMPI 3.1.3](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.14.0](#)
- ▶ [TensorRT 5.1.5](#)

Driver Requirements

Release 19.07 is based on [NVIDIA CUDA 10.1.168](#), which requires [NVIDIA Driver](#) release 418.67. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.07 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute

capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.07 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA cuDNN 7.6.1](#)
- ▶ Latest version of [MLNX_OFED +3.4](#)
- ▶ Latest version of [TensorFlow 1.14.0](#)
- ▶ Latest version of [Ubuntu 18.04](#)

Announcements

We will be migrating to Python 3 in a future DIGITS container release.

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 28. DIGITS Release 19.06

The NVIDIA application of DIGITS, release 19.06, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.06-tensorflow` includes the TensorFlow framework only. Tag `19.06-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1.168](#) including [cuBLAS 10.2.0.168](#)
- ▶ [NVIDIA cuDNN 7.6.0](#)
- ▶ [NVIDIA NCCL 2.4.7](#) (optimized for [NVLink™](#))
- ▶ [OpenMPI 3.1.3](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.13.1](#)
- ▶ [TensorRT 5.1.5](#)

Driver Requirements

Release 19.06 is based on [NVIDIA CUDA 10.1.168](#), which requires [NVIDIA Driver](#) release 418.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.06 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute

capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.06 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA CUDA 10.1.168](#) including [cuBLAS 10.2.0.168](#)
- ▶ Latest version of [NVIDIA NCCL 2.4.7](#)
- ▶ Ubuntu 16.04 with May 2019 updates (see Announcements)

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Announcements

In the next release, we will no longer support [Ubuntu 16.04](#). Release 19.07 will instead support [Ubuntu 18.04](#).

Known Issues

There are no known issues in this release.

Chapter 29. DIGITS Release 19.05

The NVIDIA application of DIGITS, release 19.05, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.05-tensorflow` includes the TensorFlow framework only. Tag `19.05-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1 Update 1](#) including [cuBLAS 10.1 Update 1](#)
- ▶ [NVIDIA cuDNN 7.6.0](#)
- ▶ [NVIDIA NCCL 2.4.6](#) (optimized for [NVLink™](#))
- ▶ [OpenMPI 3.1.3](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.13.1](#)
- ▶ [TensorRT 5.1.5](#)

Driver Requirements

Release 19.05 is based on CUDA 10.1 Update 1, which requires [NVIDIA Driver](#) release 418.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.05 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute

capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.05 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA CUDA 10.1 Update 1](#) including [cuBLAS 10.1 Update 1](#)
- ▶ Latest version of [NVIDIA cuDNN 7.6.0](#)
- ▶ Latest version of [TensorRT 5.1.5](#)
- ▶ Ubuntu 16.04 with April 2019 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

- ▶ The DIGITS container with `19.05-tensorflow` tag may not run training tasks properly in vGPU environment when vGPU memory is 2GB or smaller.
- ▶ When creating datasets with S3 feature (Use S3), using the S3 zone other than the default may not work properly.

Chapter 30. DIGITS Release 19.04

The NVIDIA application of DIGITS, release 19.04, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.04-tensorflow` includes the TensorFlow framework only. Tag `19.04-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1.105](#) including [cuBLAS 10.1.0.105](#)
- ▶ [NVIDIA cuDNN 7.5.0](#)
- ▶ [NVIDIA NCCL 2.4.6](#) (optimized for [NVLink™](#))
- ▶ [OpenMPI 3.1.3](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.13.1](#)
- ▶ [TensorRT 5.1.2](#)

Driver Requirements

Release 19.04 is based on CUDA 10.1, which requires [NVIDIA Driver](#) release 418.xx.x+. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.04 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute

capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.04 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA NCCL 2.4.6](#)
- ▶ Latest version of [cuBLAS 10.1.0.105](#)
- ▶ Ubuntu 16.04 with March 2019 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

- ▶ The GAN example in the `gan_features.py` file inside the `digits:19.04-tensorflow` container does not work properly due to an import error and other issues.

Chapter 31. DIGITS Release 19.03

The NVIDIA application of DIGITS, release 19.03, is available on [NGC](#).

Contents of the DIGITS container

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.03-tensorflow` includes the TensorFlow framework only. Tag `19.03-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.1.105](#) including [cuBLAS 10.1.105](#)
- ▶ [NVIDIA cuDNN 7.5.0](#)
- ▶ [NVIDIA NCCL 2.4.3](#) (optimized for [NVLink™](#))
- ▶ [OpenMPI 3.1.3](#)
- ▶ [NVCaffe 0.17.3](#)
- ▶ [TensorFlow 1.13.1](#)
- ▶ [TensorRT 5.1.2](#)

Driver Requirements

Release 19.03 is based on CUDA 10.1, which requires [NVIDIA Driver](#) release 418.xx+. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384.111+ or 410. The CUDA driver's compatibility package only supports particular drivers. For a complete list of supported drivers, see the [CUDA Application Compatibility](#) topic. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.03 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute

capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.03 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA CUDA 10.1.105](#) including [cuBLAS 10.1.105](#)
- ▶ Latest version of [NVIDIA cuDNN 7.5.0](#)
- ▶ Latest version of [NVIDIA NCCL 2.4.3](#)
- ▶ Latest version of [NVCaffe 0.17.3](#)
- ▶ Latest version of [TensorFlow 1.13.1](#)
- ▶ Latest version of [TensorRT 5.1.2](#)
- ▶ Ubuntu 16.04 with February 2019 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

- ▶ If using or upgrading to a 3-part-version driver, for example, a driver that takes the format of `xxx.yy.zz`, you will receive a `Failed to detect NVIDIA driver version.` message. This is due to a known bug in the entry point script's parsing of 3-part driver versions. This message is non-fatal and can be ignored. This will be fixed in the 19.04 release.

Chapter 32. DIGITS Release 19.02

The NVIDIA application of DIGITS, release 19.02, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.02-tensorflow` includes the TensorFlow framework only. Tag `19.02-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.0.130](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] 10.0.130](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 7.4.2](#)
- ▶ [NCCL 2.3.7](#) (optimized for [NVLink[™]](#))
- ▶ [OpenMPI 3.1.3](#)
- ▶ [NVCaffe 0.17.2](#)
- ▶ [TensorFlow 1.13.0-rc0](#)
- ▶ [TensorRT 5.0.2](#)

Driver Requirements

Release 19.02 is based on CUDA 10, which requires [NVIDIA Driver](#) release 410.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.02 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.02 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [TensorFlow 1.13.0-rc0](#)
- ▶ Ubuntu 16.04 with January 2019 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

- ▶ The GoogleNet example in the TensorFlow framework container may fail during the validation stage.
- ▶ If using or upgrading to a 3-part-version driver, for example, a driver that takes the format of `xxx.yy.zz`, you will receive a `Failed to detect NVIDIA driver version.` message. This is due to a known bug in the entry point script's parsing of 3-part driver versions. This message is non-fatal and can be ignored. This will be fixed in the 19.04 release.

Chapter 33. DIGITS Release 19.01

The NVIDIA application of DIGITS, release 19.01, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `19.01-tensorflow` includes the TensorFlow framework only. Tag `19.01-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.0.130](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] 10.0.130](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 7.4.2](#)
- ▶ [NCCL 2.3.7](#) (optimized for [NVLink[™]](#))
- ▶ [OpenMPI 3.1.3](#)
- ▶ [NVCaffe 0.17.2](#)
- ▶ [TensorFlow 1.12.0](#)
- ▶ [TensorRT 5.0.2](#)

Driver Requirements

Release 19.01 is based on CUDA 10, which requires [NVIDIA Driver](#) release 410.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 19.01 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 19.01 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVIDIA cuDNN 7.4.2](#)
- ▶ Latest version of [OpenMPI 3.1.3](#)
- ▶ Ubuntu 16.04 with December 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

- ▶ The GoogleNet example in the TensorFlow framework container may fail during the validation stage.
- ▶ In the 19.01-caffe container, the following plugins rely on TensorFlow or another deep learning framework. We recommend that you ignore these plugins because they do not add any additional functionality.
 - ▶ `digits/plugins/data/bAbI`
 - ▶ `digits/plugins/data/gan`
 - ▶ `digits/plugins/view/gan`
 - ▶ `digits/plugins/data/textClassification`
 - ▶ `digits/plugins/view/textClassification`

These plugins will be removed from the container in a future release.

- ▶ In the 19.01-tensorflow container, the following plugins rely on Caffe or another deep learning framework. We recommend that you ignore these plugins because they do not add any additional functionality.
 - ▶ `digits/plugins/data/bAbI`
 - ▶ `digits/plugins/data/sunnybrook`
 - ▶ `digits/plugins/data/textClassification`
 - ▶ `digits/plugins/view/textClassification`

These plugins will be removed from the container in a future release.

- ▶ If using or upgrading to a 3-part-version driver, for example, a driver that takes the format of `xxx.yy.zz`, you will receive a `Failed to detect NVIDIA driver version.` message. This is due to a known bug in the entry point script's parsing of 3-part driver versions. This message is non-fatal and can be ignored. This will be fixed in the 19.04 release.

Chapter 34. DIGITS Release 18.12

The NVIDIA application of DIGITS, release 18.12, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `18.12-tensorflow` includes the TensorFlow framework only. Tag `18.12-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.0.130](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] 10.0.130](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 7.4.1](#)
- ▶ [NCCL 2.3.7](#) (optimized for [NVLink[™]](#))
- ▶ [OpenMPI 3.1.2](#)
- ▶ [NVCaffe 0.17.2](#)
- ▶ [TensorFlow 1.12.0](#)
- ▶ [TensorRT 5.0.2](#)

Driver Requirements

Release 18.12 is based on CUDA 10, which requires [NVIDIA Driver](#) release 410.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384. For more information, see [CUDA Compatibility and Upgrades](#).

GPU Requirements

Release 18.12 supports CUDA compute capability 6.0 and higher. This corresponds to GPUs in the Pascal, Volta, and Turing families. Specifically, for a list of GPUs that this compute capability corresponds to, see [CUDA GPUs](#). For additional support details, see [Deep Learning Frameworks Support Matrix](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.12 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [TensorFlow 1.12.0](#)
- ▶ Latest version of [NVCaffe 0.17.2](#)
- ▶ Ubuntu 16.04 with November 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

The GoogleNet example in the TensorFlow framework container may fail during the validation stage.

Chapter 35. DIGITS Release 18.11

The NVIDIA application of DIGITS, release 18.11, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

Two DIGITS containers are available for this release based on the deep learning frameworks. Tag `18.11-tensorflow` includes the TensorFlow framework only. Tag `18.11-caffe` includes the Caffe only.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.0.130](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] 10.0.130](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 7.4.1](#)
- ▶ [NCCL 2.3.7](#) (optimized for [NVLink[™]](#))
- ▶ [OpenMPI 3.1.2](#)
- ▶ [NVCaffe 0.17.1](#)
- ▶ [TensorFlow 1.12.0-rc2](#)
- ▶ [TensorRT 5.0.2](#)

Driver Requirements

Release 18.11 is based on CUDA 10, which requires [NVIDIA Driver](#) release 410.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384. For more information, see [CUDA Compatibility and Upgrades](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.11 is based on [DIGITS version 6.1.1](#)
- ▶ You can now pull the DIGITS container that is specific to either the Caffe or TensorFlow framework. For more information, see [Running DIGITS](#).

- ▶ Latest version of [NCCL 2.3.7](#).
- ▶ Latest version of [NVIDIA cuDNN 7.4.1](#).
- ▶ Latest version of [TensorRT 5.0.2](#)
- ▶ Latest version of [TensorFlow 1.12.0-rc2](#)
- ▶ Ubuntu 16.04 with October 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 36. DIGITS Release 18.10

The NVIDIA application of DIGITS, release 18.10, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.0.130](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 10.0.130](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.4.0](#)
- ▶ [NCCL 2.3.6](#) (optimized for [NVLink[™]](#))
- ▶ [OpenMPI 3.1.2](#)
- ▶ [NVCaffe 0.17.1](#)
- ▶ [TensorFlow 1.10.0](#)
- ▶ [TensorRT 5.0.0 RC](#)

Driver Requirements

Release 18.10 is based on CUDA 10, which requires [NVIDIA Driver](#) release 410.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384. For more information, see [CUDA Compatibility and Upgrades](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.10 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NCCL 2.3.6](#).
- ▶ Added support for [OpenMPI 3.1.2](#).
- ▶ Ubuntu 16.04 with September 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 37. DIGITS Release 18.09

The NVIDIA application of DIGITS, release 18.09, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 10.0.130](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 10.0.130](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.3.0](#)
- ▶ [NCCL 2.3.4](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe 0.17.1](#)
- ▶ [TensorFlow 1.10.0](#)
- ▶ [TensorRT 5.0.0 RC](#)

Driver Requirements

Release 18.09 is based on CUDA 10, which requires [NVIDIA Driver](#) release 410.xx. However, if you are running on Tesla (Tesla V100, Tesla P4, Tesla P40, or Tesla P100), you may use NVIDIA driver release 384. For more information, see [CUDA Compatibility and Upgrades](#).

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.09 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [cuDNN 7.3.0](#).
- ▶ Latest version of [CUDA 10.0.130](#) which includes support for DGX-2, Turing, and Jetson Xavier.
- ▶ Latest version of [cuBLAS 10.0.130](#).
- ▶ Latest version of [NCCL 2.3.4](#).

- ▶ Latest version of [TensorRT 5.0.0 RC](#).



Note: All 18.09 containers inherit TensorRT 5.0.0 RC from the base container, however, some containers may not use TensorRT if there is no support for TensorRT in the given framework.

- ▶ Latest version of [TensorFlow 1.10.0](#).
- ▶ Ubuntu 16.04 with August 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

During training a model with Caffe, accuracy and loss may not appear on the chart.

Chapter 38. DIGITS Release 18.08

The NVIDIA application of DIGITS, release 18.08, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) (see Errata section and 2.1) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.425](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.2.1](#)
- ▶ [NCCL 2.2.13](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe 0.17.1](#)
- ▶ [TensorFlow 1.9.0](#)
- ▶ [Torch[™] 7](#)

Driver Requirements

Release 18.08 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.08 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [TensorFlow 1.9.0](#).
- ▶ Latest version of [cuDNN 7.2.1](#).
- ▶ Ubuntu 16.04 with July 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

- ▶ The AlexNet example in Torch may fail in inferencing stage.
- ▶ The GAN-CelebA example might not work when generating face images.

Chapter 39. DIGITS Release 18.07

The NVIDIA application of DIGITS, release 18.07, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) (see Errata section and 2.1) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.425](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.1.4](#)
- ▶ [NCCL 2.2.13](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe 0.17.1](#)
- ▶ [TensorFlow[™] 1.8.0](#)
- ▶ [Torch[™] 7](#)

Driver Requirements

Release 18.07 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.07 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.425](#).
- ▶ Latest version of [NVCaffe 0.17.1](#)
- ▶ Ubuntu 16.04 with June 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

The GAN-CelebA example might not work when generating face images.

Chapter 40. DIGITS Release 18.06

The NVIDIA application of DIGITS, release 18.06, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) (see Errata section and 2.1) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.333](#) (see section 2.3.1)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.1.4](#)
- ▶ [NCCL 2.2.13](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.17.0](#)
- ▶ [TensorFlow[™] 1.8.0](#)
- ▶ [Torch[™] 7](#)

Driver Requirements

Release 18.06 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.06 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [TensorFlow[™] 1.8.0](#)
- ▶ Ubuntu 16.04 with May 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 41. DIGITS Release 18.05

The NVIDIA application of DIGITS, release 18.05, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) (see Errata section and 2.1) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.333](#) (see section 2.3.1)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.1.2](#)
- ▶ [NCCL 2.1.15](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.17.0](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.7.0](#)

Driver Requirements

Release 18.05 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.05 is based on [DIGITS version 6.1.1](#)
- ▶ Added a “Blob format” option to include and set `store_blobs_in_old_format` in `solver.prototxt` when training with NVCaffe. If you set the option to `NVCaffe` and backend framework is NVCaffe, `solver.prototxt` will include `store_blobs_in_old_format=false`. This option is the default and the `caffemodel` files generated from the training stage are not compatible with BVLC Caffe.

If you set the option to `Compatible`, DIGITS sets `store_blobs_in_old_format=true` in `solver.prototxt` and `caffemodel` files are compatible with BVLC Caffe.



Note: The `store_blobs_in_old_format` attribute is not recognized by BVLC Caffe, therefore, you have to remove that line when reusing `solver.prototxt` and fine-tuning with BVLC Caffe.

- ▶ Updated resizing images algorithms to remove deprecated Python modules. Previous DIGITS called `scipy.misc.imresize` to perform a few image resizing steps. This API is marked as deprecated in `scipy.misc`. DIGITS now utilizes `skimage.transform.resize`.
- ▶ Several updates and improvements on CI test scripts
- ▶ Ubuntu 16.04 with April 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 42. DIGITS Release 18.04

The NVIDIA application of DIGITS, release 18.04, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) (see Errata section and 2.1) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.333](#) (see section 2.3.1)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.1.1](#)
- ▶ [NCCL 2.1.15](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.17.0](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.7.0](#)

Driver Requirements

Release 18.04 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.04 is based on [DIGITS version 6.1.1](#)
- ▶ Latest version of [NVCaffe[™] 0.17.0](#)
- ▶ Latest version of [TensorFlow[™] 1.7.0](#)
- ▶ Fixed a race condition on Torch data reader during CI tests
- ▶ Fixed a protobuf issue when the latest TensorFlow and NVCaffe co-exist inside the container
- ▶ Fixed a semantic segmentation bug on one DIGITS example
- ▶ Fixed a bug when viewing samples in LMDB, merged from upstream (6.1.1)

- ▶ Latest version of NCCL 2.1.15
- ▶ Ubuntu 16.04 with March 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

There are no known issues in this release.

Chapter 43. DIGITS Release 6.1.1

Key Features and Enhancements

The [DIGITS version 6.1.1](#) release includes the following key features and enhancements. These enhancements are new since [DIGITS version 6.1](#).

- ▶ Implemented an update for the new TensorFlow API ([#2014](#))
- ▶ Updated CI scripts to add some new deps to Caffe build ([#1993](#))
- ▶ Updated import and API for pydicom 1.0
- ▶ Fixed label distribution and its view page ([#1916](#))

Chapter 44. DIGITS Release 18.03

The NVIDIA application of DIGITS, release 18.03, is available.

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) (see Errata section and 2.1) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.333](#) (see section 2.3.1)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.1.1](#)
- ▶ [NCCL 2.1.2](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16.6](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.4.0](#)

Driver Requirements

Release 18.03 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.03 is based on [DIGITS version 6.1](#)
- ▶ Latest version of [NVCaffe[™] 0.16.6](#)
- ▶ Fixed a `pydicom` import issue.
- ▶ Latest version of cuBLAS
- ▶ Latest version of cuDNN
- ▶ Ubuntu 16.04 with February 2018 updates

Security Notice

DIGITS is not designed to be run as an exposed external web service.

Known Issues

- ▶ The semantic-segmentation example does not work with bundled NVCAffe.
- ▶ The network description with a customized Python layer does not work.

Chapter 45. DIGITS Release 18.02

The NVIDIA application of DIGITS, release 18.02, is available.

[NVIDIA DIGITS](#) application version 18.02 is based on [DIGITS 6.1](#).

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) including:
 - ▶ [CUDA[®] Basic Linear Algebra Subroutines library[™] \(cuBLAS\) 9.0.282 Patch 2](#) which is installed by default
 - ▶ [cuBLAS 9.0.234 Patch 1](#) as a debian file. Installing Patch 1 by issuing the `dpkg -i /opt/cuda-cublas-9-0_9.0.234-1_amd64.deb` command is the workaround for the known issue described below.
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.0.5](#)
- ▶ [NCCL 2.1.2](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16.5](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.4.0](#)

Driver Requirements

Release 18.02 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 18.02 is based on [DIGITS version 6.1](#)
- ▶ Allow WebSocket to automatically detect browser scheme
- ▶ Fixed missing `URL_PREFIX` in html files

- ▶ Fixed dtype error due to TensorFlow API change
- ▶ Dependency update to match three frameworks
- ▶ Latest version of cuBLAS
- ▶ Ubuntu 16.04 with January 2018 updates

Known Issues

cuBLAS 9.0.282 regresses RNN seq2seq FP16 performance for a small subset of input sizes. This issue should be fixed in the next update. As a workaround, install cuBLAS 9.0.234 Patch 1 by issuing the `dpkg -i /opt/cuda-cublas-9-0_9.0.234-1_amd64.deb` command.

Chapter 46. DIGITS Release 6.1

Key Features and Enhancements

The [DIGITS version 6.1](#) release includes the following key features and enhancements. These enhancements are new since [DIGITS version 6.0](#).

- ▶ Added functionality to integrate DIGITS with S3 Endpoints ([#1868](#))
- ▶ Added publish to inference server on classification workflow ([#1906](#))
- ▶ Fix frozen graph issue ([#1907](#))
- ▶ Fix 404 error for `/datasets/inference-form/...` from [#1888](#) ([#1889](#))
- ▶ Remove timeout assertion ([#1859](#))

Using DIGITS 6.1

Ensure you are familiar with the following notes when using this version.

- ▶ HTML embedding now defaults to PNG
- ▶ Images that causes exceptions will now show the file name

Known Issues

There is an out of memory error in the semantic-segmentation example when training the FCN AlexNet model on Tesla P100.

Chapter 47. DIGITS Release 18.01

The NVIDIA application of DIGITS, release 18.01, is available.

[NVIDIA DIGITS](#) application version 18.01 is based on [DIGITS 6.0](#).

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#) including [Python 2.7](#)
- ▶ [NVIDIA CUDA 9.0.176](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] 9.0.282](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 7.0.5](#)
- ▶ [NCCL 2.1.2](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16.4](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.4.0](#)

Driver Requirements

Release 18.01 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ Includes [DIGITS 6.0](#)
- ▶ Latest version of cuDNN
- ▶ Latest version of cuBLAS
- ▶ Latest version of NCCL
- ▶ Ubuntu 16.04 with December 2017 updates

Known Issues

cuBLAS 9.0.282 regresses RNN seq2seq FP16 performance for a small subset of input sizes. As a workaround, revert back to the 11.12 container.

Chapter 48. DIGITS Release 17.12

The NVIDIA application of DIGITS, release 17.12, is available.

[NVIDIA DIGITS](#) application version 17.12 is based on [DIGITS 6.0](#).

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA 9.0.176](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] 9.0.234](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 7.0.5](#)
- ▶ [NCCL 2.1.2](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16.4](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.4.0](#)

Driver Requirements

Release 17.12 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.12 is based on [DIGITS version 6.0](#)
- ▶ Latest version of [TensorFlow[™] 1.4.0](#)
- ▶ Latest version of [CUDA[®]](#)
- ▶ Latest version of [cuDNN](#)
- ▶ Latest version of [NCCL](#)
- ▶ Ubuntu 16.04 with November 2017 updates

Known Issues

There are no known issues in this release.

Chapter 49. DIGITS Release 17.11

The NVIDIA application of DIGITS, release 17.11, is available.

[NVIDIA DIGITS](#) application version 17.11 is based on [DIGITS 6.0](#).

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA 9.0.176](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] 9.0.234](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 7.0.4](#)
- ▶ [NCCL 2.1.2](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16.4](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.3.0](#)

Driver Requirements

Release 17.11 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.11 is based on [DIGITS version 6.0](#)
- ▶ Latest version of CUDA[®]
- ▶ Latest version of cuDNN
- ▶ Latest version of NCCL
- ▶ Ubuntu 16.04 with October 2017 updates

Known Issues

There are no known issues in this release.

Chapter 50. DIGITS Release 17.10

The NVIDIA application of DIGITS, release 17.10, is available.

[NVIDIA DIGITS](#) application version 17.10 is based on [DIGITS 6.0](#).

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA[®] 9.0](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.0.3](#)
- ▶ [NCCL 2.0.5](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16.4](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.3.0](#)

Driver Requirements

Release 17.10 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.10 is based on [DIGITS version 6.0](#)
- ▶ Latest version of CUDA[®]
- ▶ Latest version of cuDNN
- ▶ Latest version of NCCL
- ▶ Ubuntu 16.04 with September 2017 updates

Known Issues

There are no known issues in this release.

Chapter 51. DIGITS Release 17.09

The NVIDIA application of DIGITS, release 17.09, is available.

[NVIDIA DIGITS](#) application version 17.09 is based on [DIGITS 6.0](#).

Contents of DIGITS

This application contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the application.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA[®] 9.0](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 7.0.2](#)
- ▶ [NCCL 2.0.5](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16.4](#)
- ▶ [Torch[™] 7](#)
- ▶ [TensorFlow[™] 1.3.0](#)

Driver Requirements

Release 17.09 is based on CUDA 9, which requires [NVIDIA Driver](#) release 384.xx.

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.09 is based on [DIGITS version 6.0](#)
- ▶ Latest version of [NVCaffe[™] 0.16.4](#)
- ▶ Latest version of [TensorFlow[™] 1.3.0](#)
- ▶ Latest version of CUDA
- ▶ Latest version of cuDNN
- ▶ Latest version of NCCL
- ▶ Ubuntu 16.04 with August 2017 updates

Known Issues

There are no known issues in this release.

Chapter 52. DIGITS Release 6.0

Key Features and Enhancements

The [DIGITS version 6.0](#) release includes the following key features and enhancements. These enhancements are new since version [DIGITS version 5.0](#).

- ▶ Added TensorFlow™ support for DIGITS
- ▶ Added TensorBoard support for DIGITS
- ▶ Updated documentation for how to use TensorFlow inside DIGITS
- ▶ Added Siamese Network examples in DIGITS with TensorFlow, NVcaffe™, and Torch™
- ▶ Updated auto-encoder, binary-segmentation, fine-tuning, and regression with TensorFlow support
- ▶ Added LeNet, AlexNet, and GoogLeNet template models for TensorFlow
- ▶ Added GANS Model in the Model store
- ▶ Added U-Net Model in Model store
- ▶ Added tutorial for DICOM data ingestion
- ▶ Added support for URL prefix
- ▶ Fixed issues with loading and saving TensorFlow models

Using DIGITS 6.0

Ensure you are familiar with TensorFlow, TensorFlow API, and the TensorFlow workflow. For more information, see the [TensorFlow User Guide](#).

Known Issues

- ▶ TensorFlow models were found to be taking slightly longer to train than Torch and NVcaffe.
- ▶ GANS cannot take advantage of multi-GPU set-ups.

Chapter 53. DIGITS Release 17.07

The NVIDIA container image of DIGITS, release 17.07, is available.

[NVIDIA DIGITS](#) container image version 17.07 is based on [DIGITS 5.0](#).

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.61.2](#) including [CUDA[®] Basic Linear Algebra Subroutines library[™] \[cuBLAS\] Patch 2](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \[cuDNN\] 6.0.21](#)
- ▶ [NCCL 2.0.3](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS container image version includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.07 is based on [DIGITS version 6.0](#)
- ▶ Ubuntu 16.04 with June 2017 updates

Known Issues

There are no known issues in this release.

Chapter 54. DIGITS Release 17.06

The NVIDIA container image of DIGITS, release 17.06, is available.

[NVIDIA DIGITS](#) container image version 17.06 is based on [DIGITS 5.0](#).

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.61](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 6.0.21](#)
- ▶ [NCCL 1.6.1](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS release includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.06 is based on [DIGITS 5.0](#)
- ▶ Ubuntu 16.04 with May 2017 updates

Known Issues

There are no known issues in this release.

Chapter 55. DIGITS Release 17.05

The NVIDIA container image of DIGITS, release 17.05, is available.

[NVIDIA DIGITS](#) container image version 17.05 is based on [DIGITS 5.0](#).

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.61](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 6.0.21](#)
- ▶ [NCCL 1.6.1](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS release includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.05 is based on [DIGITS 5.0](#)
- ▶ Latest cuDNN release
- ▶ Ubuntu 16.04 with April 2017 updates

Known Issues

DetectNet training can hang on DIGITS 17.05.

Chapter 56. DIGITS Release 17.04

The NVIDIA container image of DIGITS, release 17.04, is available.

[NVIDIA DIGITS](#) container image version 17.04 is based on [DIGITS 5.0](#).

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.61](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 6.0.20](#)
- ▶ [NCCL 1.6.1](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS release includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.04 is based on [DIGITS 5.0](#)
- ▶ Ubuntu 16.04 with March 2017 updates

Known Issues

There are no known issues or limitations in this release.

Chapter 57. DIGITS Release 17.03

The NVIDIA container image of DIGITS, release 17.03, is available.

[NVIDIA DIGITS](#) container image version 17.03 is based on [DIGITS 5.0](#).

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 16.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.61](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 6.0.20](#)
- ▶ [NCCL 1.6.1](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS release includes the following key features and enhancements.

- ▶ [NVIDIA DIGITS](#) application version 17.03 is based on [DIGITS 5.0](#)
- ▶ Ubuntu 16.04 with February 2017 updates

Known Issues

Model is not currently supported.

Chapter 58. DIGITS Release 17.02

The NVIDIA container image of DIGITS, release 17.02, is available.

[NVIDIA DIGITS](#) container image version 17.02 is based on [DIGITS 5.0](#).

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 14.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.61](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 6.0.13](#)
- ▶ [NCCL 1.6.1](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS release includes the following key features and enhancements.

- ▶ Web-based graphical user interface for deep learning training
- ▶ [NVIDIA DIGITS](#) application version 17.02 is based on [DIGITS 5.0](#)
- ▶ Ubuntu 14.04 with January 2017 updates

Known Issues

There are no known issues or limitations in this release.

Chapter 59. DIGITS Release 17.01

The NVIDIA container image of DIGITS, release 17.01, is available.

[NVIDIA DIGITS](#) container image version 17.01 is based on [DIGITS 5.0](#).

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 14.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.54](#)
- ▶ [NVIDIA CUDA[®] 6.0.10](#)
- ▶ [NCCL 1.6.1](#) (optimized for [NVLink[™]](#))
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS release includes the following key features and enhancements.

- ▶ Web-based graphical user interface for deep learning training
- ▶ [NVIDIA DIGITS](#) application version 17.01 is based on [DIGITS 5.0](#)
- ▶ Ubuntu 14.04 with December 2016 updates

Known Issues

There are no known issues or limitations in this release.

Chapter 60. DIGITS Release 16.12

The NVIDIA container image of DIGITS, release 16.12, is available.

[NVIDIA DIGITS](#) container image version 16.12 is based on [DIGITS 5.0](#).



Note: DIGITS 5.0 uses port 5000 by default.

Contents of DIGITS

This container image contains the complete source of the version of DIGITS in `/opt/digits`. It is pre-built and installed into the `/usr/local/python/` directory in the container image.

The container also includes the following:

- ▶ [Ubuntu 14.04](#)
- ▶ [NVIDIA CUDA[®] 8.0.54](#)
- ▶ [NVIDIA CUDA[®] Deep Neural Network library[™] \(cuDNN\) 6.0.5](#)
- ▶ [NCCL 1.6.1 \(optimized for NVLink[™]\)](#)
- ▶ [NVCaffe[™] 0.16](#)
- ▶ [Torch[™] 7](#)

Key Features and Enhancements

This DIGITS release includes the following key features and enhancements.

- ▶ Web-based graphical user interface for deep learning training
- ▶ [NVIDIA DIGITS](#) application version 16.12 is based on [DIGITS 5.0](#)
- ▶ Ubuntu 14.04 with November 2016 updates

Known Issues

There are no known issues or limitations in this release.

Chapter 61. DIGITS Release 5.0

Key Features and Enhancements

The [DIGITS version 5.0](#) release includes the following key features and enhancements. These enhancements are new since [DIGITS version 4.0](#).

- ▶ Enabled the DIGITS Model Store
- ▶ Fixed calculations related to batch accumulation for NVcaffe™
- ▶ Support for image segmentation workflows
- ▶ Online data augmentation with Torch™
- ▶ Show CPU and system memory utilization during training
- ▶ Improved bounding-box visualizations for object detection models
- ▶ Created groups of jobs for easier display on the home page
- ▶ Enabled sharing of data visualization extensions for both dataset exploration and viewing inference results
- ▶ Support for plugin extensions
- ▶ Added documentation for the REST API
- ▶ Fixed bug with Torch and `CUDA_VISIBLE_DEVICES`
- ▶ Fixed issues with browsers returning incorrectly cached `css` and `js` files
- ▶ New design for Torch multi-GPU training
- ▶ Added Ubuntu 16.04 support by updating dependency versions
- ▶ `digits-devserver` is now a small shell script instead of a Python script

Using DIGITS 5.0

Ensure you are familiar with the following notes when using this version.

- ▶ Use environment variables for configuration instead of a file

Deprecated Features

- ▶ Removed the `digits-server` script and its dependency on `gunicorn`

Known Issues

- ▶ Training goes on longer than required when using batch accumulation

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