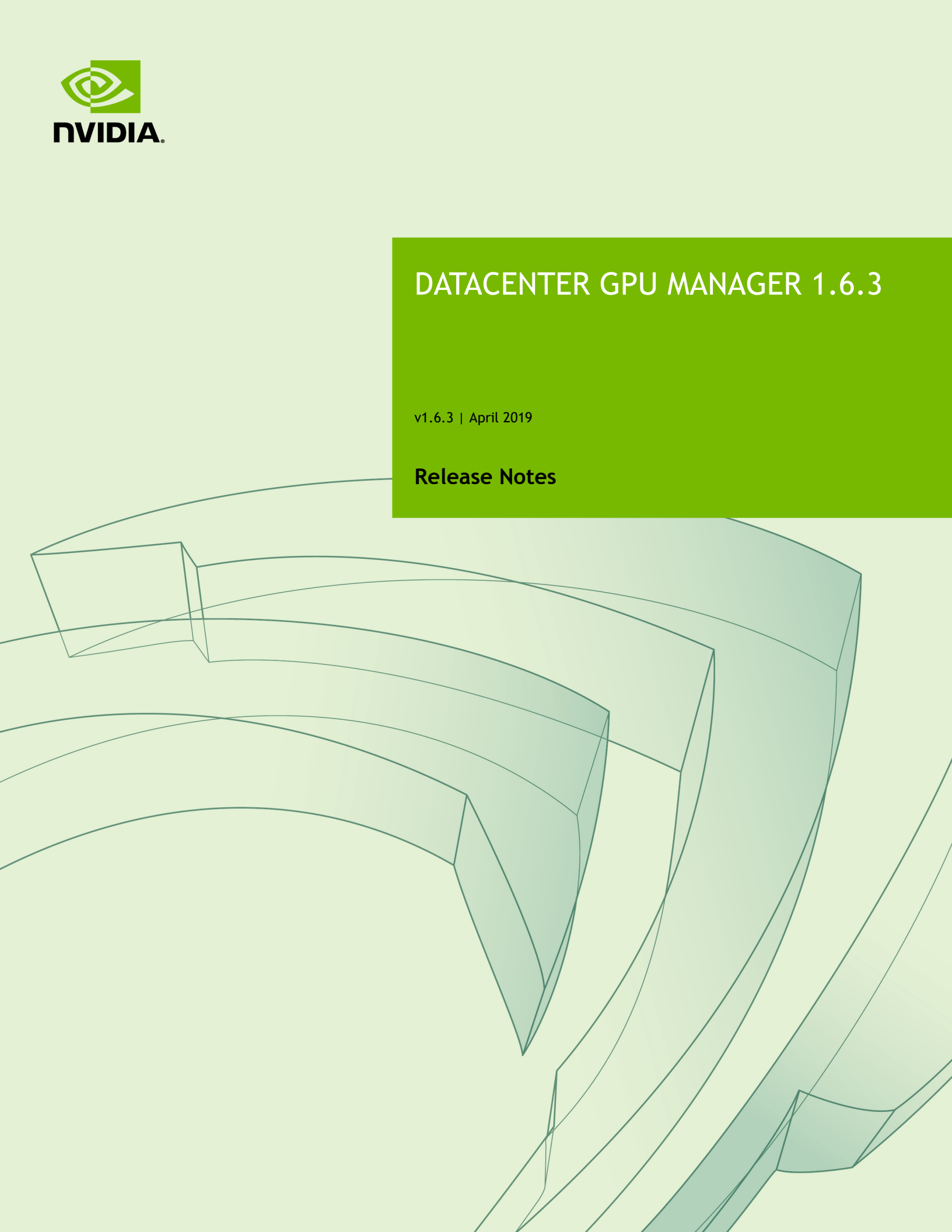

DATACENTER GPU MANAGER 1.6.3

v1.6.3 | April 2019

Release Notes

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CHANGELOG

New Features

This version of DCGM (v1.6.3) requires a minimum R384 driver that can be downloaded from NVIDIA Drivers. On NVSwitch based systems such as DGX-2 or HGX-2, a minimum of R410 driver is required. It is recommended to install the latest Tesla driver from NVIDIA drivers for use with DCGM.

General

- DCGM Diagnostics now include a training mode (**`--train`**). This runs several iterations of the diagnostic to produce a configure file with tuned pass/fail criteria for stable systems. This feature is beta for v1.6.
- Added a command line parameter (**`--throttle-mask`**) and a global config file parameter (throttle-mask) for specifying throttle errors to ignore when running a DCGM Diagnostic (**`dcgmi diag`**)

Platform Support

- Added DCGM Diagnostics (NVVS) support for Tesla T4, including CUDA 10 compatible plugins.

Improvements

General

- DCGM Health Watch now performs additional GPU memory health checks.
- Updated error messages to provide more information about what went wrong when a failure occurs during a DCGM Diagnostic.
- NVLink bandwidth now reports is MB/s instead of total number of sent bytes since the monitoring start.
- DCGM can now detach and reattach to GPUs without being restarted.
- DCGM ignores throttling failures by default on Tesla K80 and T4 GPUs.

Bug Fixes

- Fixed an issue with debug options in DCGM Diagnostics (e.g. **-debugLogFile**)
- Fixed an issue where running nv-hostengine without root privileges would return an error when creating a pid file and may hang in some cases.
- Fixed an issue where DCGM Diagnostics would fail all software tests when the first test failed.
- **dcgmi diag -h** has been updated to be more descriptive for the run (**-r**) option.
- Fixed an issue where sending **SIGINT** (e.g. **ctrl-c**) to DCGM diagnostics (**dcgmi diag**) would result in a 0 exit status. Sending a **SIGINT** will now result in a **UNIX SIGINT** signal exit status (130).
- **dcgmi diag** level one test failures include all failure details from DCGM diagnostics (NVVS).
- Health watches fixed to now report a full list of failures if multiple failures are present at once.
- DCGM Diagnostic will only fail on CRC errors if the user configures it (1.5.* would fail with any CRC errors during a test).
- Fixed an issue with **DcgmHealthWatch::SetResponseV2** API that would in some cases return incorrect values for watch incidents.
- DCGM now returns the NVML version is returned instead of the driver version.
- **dcgmi topo** will not report an error if run with a single GPU in the system.
- Fixed long timeout during a connection to **nv-hostengine** daemon.
- Fixed a crash in DCGM if a module could not be loaded successfully.
- Fixed NVLink bandwidth reporting issues (incorrect units in some cases) in DCGM. Note that this fix needs a minimum driver version of 418.40.03.
- Fixed an issue where the targeted power test (DCGM diagnostics) would incorrectly fail in some cases on Tesla T4 GPUs.

Known Issues

- DCGM does not support systems with more than 16 GPUs. Support will be added in a future release.
- With DCGM Diagnostics (**dcgmi diag --help**), the debug log file generation option (**--debugLogFiledebug**) is incorrectly specified in the help listing. The correct option is **--debugLogFile**
- On P4 based systems, the memory bandwidth test may fail due to not meeting the expected threshold. This is a known issue and to reduce the bandwidth expectations and allow DCGM to succeed, use the following command: **dcgmi diag -r "memory bandwidth" -p "memory bandwidth.minimum_bandwidth=15000"**
- On K80s, **nvidia-smi** may report hardware throttling (**clocks_throttle_reasons.hw_slowdown = ACTIVE**) during DCGM Diagnostics (Level 3). The stressful workload results in power transients that

engage the HW slowdown mechanism to ensure that the Tesla K80 product operates within the power capping limit for both long term and short term timescales. For Volta or later Tesla products, this reporting issue has been fixed and the workload transients are no longer flagged as "HW Slowdown". The NVIDIA driver will accurately detect if the slowdown event is due to thermal thresholds being exceeded or external power brake event. It is recommended that customers ignore this failure mode on Tesla K80 if the GPU temperature is within specification.

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