NVIDIA DGX B200 Firmware Update Guide

NVIDIA Corporation

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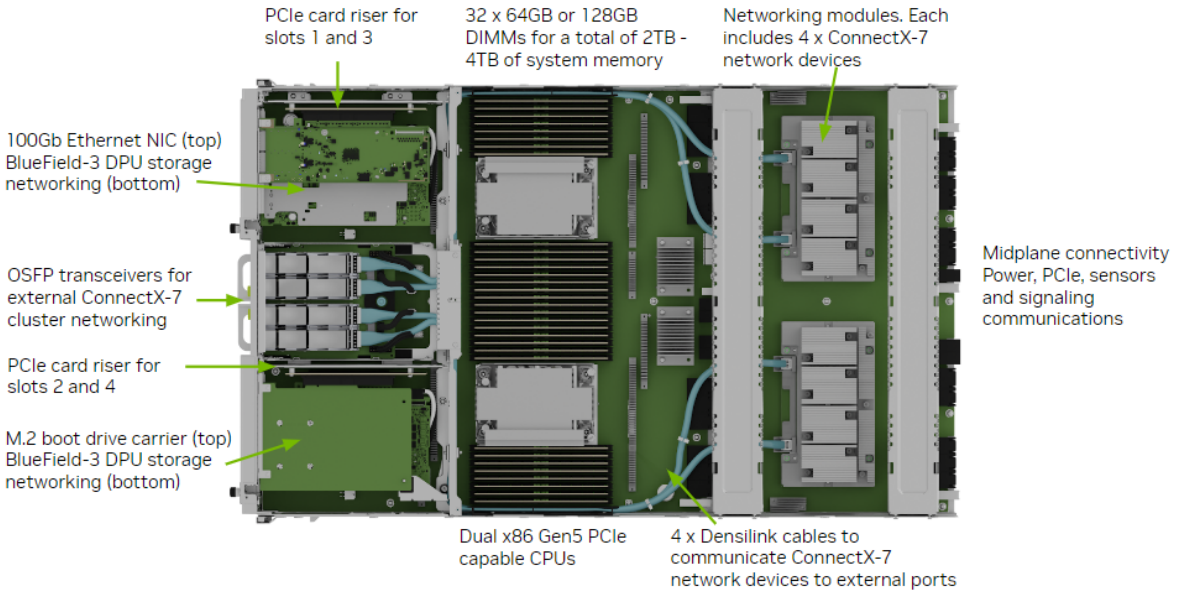
Chapter 1. About Firmware Updates

This topic provides an overview of firmware updates on the NVIDIA DGX™ B200 system.

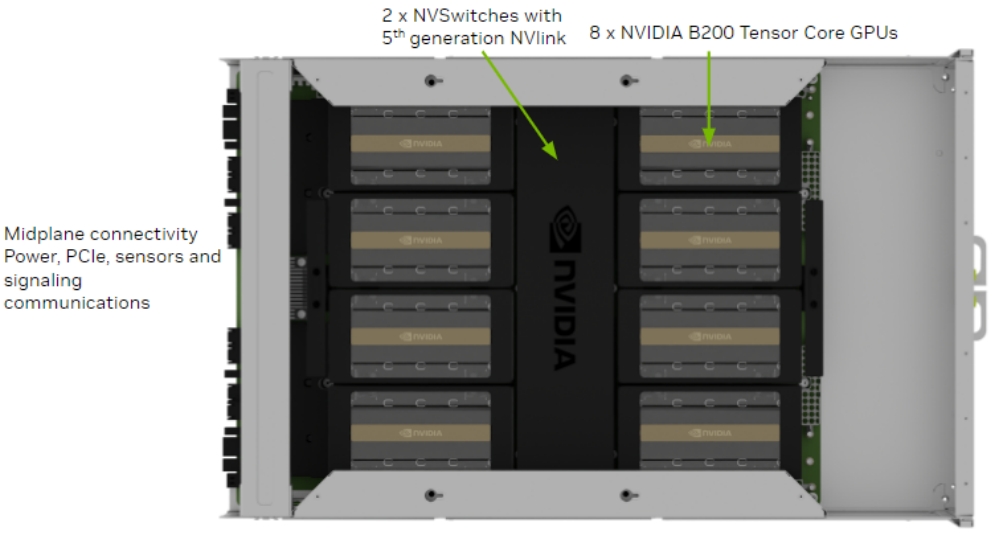
1.1. Firmware Updatable Components

The NVIDIA DGX™ B200 system has several firmware updatable components. Some of the components are on the following two trays in the system:

- The motherboard tray has components, such as the CPUs, PCH, BMC as shown in the following figure:



- The GPU tray has components, such as the GPUs, NVSwitches, HMC as shown in the following figure:



You can update the firmware on the NVIDIA DGX B200 system components out-of-band (OOB) by using Redfish APIs or from the host operating system by using the command-line interface (CLI) commands.

1.2. Firmware Update Prerequisites

- You can download firmware packages from the NVIDIA Enterprise Support Portal.
- You must know the BMC IP address, a user name, and a password. The sample commands in this document show `admin` for both the user name and the password.
- You must have the `nvfwupd` executable or know how to use the Redfish API.

1.3. Firmware Update Methods

Most of the sample commands in this document show how to update firmware using the `nvfwupd` command. You can download the executable from the NVIDIA Enterprise Support Portal.

- For more information about the command, refer to *About the nvfwupd Command*.
- For best practice when updating the firmware, follow the instructions in *Firmware Update Steps*.

You can run the `nvfwupd` command interactively to update systems. Most command examples in this document show this interactive approach. If you have several systems to update, you can create a JSON file that identifies the systems to update. Refer to *Multiple System Firmware Updates* for more information.

An alternative to the `nvfwupd` command is to update firmware by using the Redfish API. The BMC network interface provides remote management with Redfish APIs.

The *Known Issues* for updating firmware and the *firmware update steps* still apply when you use the Redfish API.

Refer to Redfish APIs Support in the *NVIDIA DGX B200 System User Guide* for more information and sample commands. The sample commands show how to update firmware with the `curl` command.

1.4. Firmware Update Activation

After the firmware update, you must perform one or more of the following tasks to activate the firmware update, depending on the components being updated:

- BMC component

  Reset the BMC by running the following command:

  ```
  sudo ipmitool mc reset cold
  ```

- PCIe Switch, PCIe Retimer, BIOS, and HGX (GPU Tray) components

  Perform a cold reset on the system using the following command:

  ```
  sudo ipmitool chassis power cycle
  ```

- EROT and CPLD components

  Perform an AC power cycle on the system by unplugging all the power supplies and then reconnecting them either manually or through an external PDU device.

  Note

  The AC power cycle will activate firmware for all updated components.

Chapter 2. About the nvfwupd Command

2.1. Requirements

The `nvfwupd` executable runs on the Linux operating system and is available for `x86_64` or `arm64` architecture machines. You can run the `x86_64` executable locally on the DGX system or use a remote Linux system.

If you run `nvfwupd` locally on the DGX system, instead of connecting to the BMC IP address, as shown in the sample commands, you can connect to the host Redfish interface IP address.

To download the latest version of the `nvfwupd` executable, log in to the NVIDIA Enterprise Support Portal.

2.2. Syntax

```
nvfwupd version 2.0.5

Usage: nvfwupd [ global options ] <command>

Global options:
    -t --target ip=<BMC IP> user=<BMC login id> password=<BMC password>
↪servertype=<Type of server>
          BMC target comprising BMC IP address and BMC login credentials.
↪The servertype sub-option is optional.
          Valid value for servertype is one of [DGX, HGX, MGX, GH200, NVOS,
↪HGXB100, GB200, MGX-NVL, GB200Switch].

    -c --config Path for config file (optional).
          Configure tool behavior.

    -v --verbose Chosen path for logfile (optional). Default path is current
↪working directory.
          Increase verbosity.

Commands:
     help       Show tool help.
```

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```
    version    Show tool version.

    show_pkg_content [ options... ]
        -p  --package        PLDM firmware package.

    unpack [ options... ]
        -p  --package        PLDM firmware package.
        -o  --outdir         Directory path to save unpacked firmware files
↪(optional).
                             Default path is current working directory of
↪tool.

    <Global options...> show_version [ options... ]
        -p  --package                PLDM firmware package.
        -j  --json                   Show output in JSON.

    <Global options...> update_fw [ options... ]
        -p  --package                PLDM firmware package.
        -y  --yes                    Bypass firmware update confirmation
↪prompt.
        -b  --background             Exit without waiting for the update
↪process to finish.
        -t  --timeout                API request timeout value in seconds.
        -s  --special                Special Update json file.
        -d  --details                Show update progress in table format.
        -j  --json                   Show output in JSON. Must be paired
↪with the -b
                                     background option, and always bypasses
↪update confirmation prompt.

    <Global options...> activate_fw [ options... ]
        -c  --cmd                    Activation command name.
                                     List of supported commands ['PWR_STATUS
↪', 'PWR_OFF', 'PWR_ON',
                                     'PWR_CYCLE', 'RESET_COLD', 'RESET_WARM',
↪ 'NVUE_PWR_CYCLE',
                                     'RF_AUX_PWR_CYCLE'].

    <Global options...> force_update [ options... ]
        enable|disable|status        Enable, disable, or check current force
↪update value on target.
        -j  --json                   Show output in JSON.

    <Global options...> show_update_progress [ options... ]
        -i  --id                     List of Task IDs delimited by space.
        -j  --json                   Show output in JSON.

    <Global options...> perform_factory_reset

    <Global options...> install_license

    <Global options...> make_upd_targets [ options... ]
```

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```
        -o  --outdir                    Directory path to create update target
↪files (optional).
                                        Default path is current working
↪directory of tool.
```

2.3. Understanding Background Processing

By default, the `nvfwupd update_fw` command communicates with the Redfish API, prints the firmware update progress to the console, and then exits when the command runs to completion.

Alternatively, you can specify the `--background` or `-b` argument so that the command communicates with the Redfish API, prints the task ID to the console, and then exits. In this case, you can periodically run the `nvfwupd show_update_progress` command with the task ID to monitor the update progress.

1. Create a component-specific `updparameters.json` file.
2. Update the firmware in the background:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-user-id> password=<bmc-password>
↪update_fw \
  -p <firmware-package-file> -y -s updparameters.json -b
```

Example output:

```
FW recipe: ['<firmware-package-file>']
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", ...}
FW update started, Task Id: 1
```

> **Note**
>
> If the `Platform dgxhxxx not supported` error appears, choose either of the following methods to resolve the unidentified platform issue:
>
> - Update the `nvfwupd` tool to version 2.0.4 or later for automatic DGX platform detection.
> - Specify the `servertype=DGX` sub-option with the `--target` option and try again. For example,
>
> ```
> nvfwupd -t ip=<bmc-ip-address> user=<bmc-user-id> password=<bmc-
> ↪password> \
> servertype=DGX update_fw -p <firmware-package-file> -y -s
> ↪parameters.json
> ```

3. Display the update progress for the task:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-user-id> password=<bmc-password>
↪show_update_progress -i 1
```

Example output:

```
{'id': ['1']}
Task Info for Id: 1
 StartTime: 2023-03-11T01:10:01-0000
 TaskState: Running
 PercentComplete: 58
 TaskStatus: OK
 EndTime: 2023-03-11T01:10:00+00:00
 TaskStatus: Task /redfish/v1/UpdateService/upload is running normally.
```

Eventually, the percent complete field reports `100` and the task state field reports `Completed`.

4. To activate the firmware update, refer to *Firmware Update Activation* for more information.

Chapter 3. DGX B200 System Firmware Update Guide Version 25.04.1

3.1. Highlights

3.1.1. Added Support

- Provides an updated GPU tray latest package, as shown in *Firmware Package Details*.

3.1.2. BMC Fixes

- No BMC fixes for this release.

3.1.3. SBIOS Fixes

- No SBIOS fixes for this release.

3.1.4. The nvfwupd Command Updates

- No updates are available.

3.2. Firmware Package Details

This firmware release supports the following systems:

- NVIDIA DGX B200

This firmware release supports the following operating systems:

- NVIDIA DGX OS 7.0.2 and higher

For more information about the operating systems, refer to the NVIDIA Base OS documentation.

You can download firmware packages from the NVIDIA Enterprise Support Portal.

The following table shows the firmware package files:

Components	Sample File Name
Combined archive	`DGXB200_25.04.1.tar.gz` The combined archive includes the firmware for the system components and the firmware for the GPU tray.
▶ Motherboard tray package ▶ GPU tray transition package ▶ GPU tray latest package	▶ `nvfw_DGX_250220.1.0.fwpkg` ▶ `nvfw_DGX-HGX-B100-B200x8_250114.1.0.fwpkg` ▶ `nvfw_DGX-HGX-B100-B200x8_250302.1.3.fwpkg`

The following table shows the information about component firmware versions.

Component	Version
Host BMC	25.02.12 Refer to *BMC Changes for DGX B200 Systems* for the list of changes.
Host BMC ERoT	04.0058
SBIOS ERoT	04.0058
SBIOS	1.6.7 Refer to *SBIOS Changes for DGX B200 Systems* for the list of changes.
Motherboard CPLD	0.2.1.9
Midplane CPLD	0.2.1.3
PSU (Delta ECD16020137)	Primary 0204 Secondary 0201 Community 0204
LiteOn	0.5.0.5
Broadcom Gen5 PCIe Switch (PEX89072-B01)	Switch 0: 0.0.7 Switch 1: 1.0.7
Astera Labs Gen5 PCIe Retimer (PT5161L)	2.07.19
Network (Cluster) Card - ConnectX-7	28.43.2026
Network (Storage) Card - ConnectX-7	28.43.2026
Network Card - BlueField-3	32.43.2024
VBIOS	**97.00.88.00.0F**
NVSwitch (GPU Tray)	**35.2014.1654**
ERoT (GPU Tray)	**01.04.0009**
HMC (GPU Tray)	**25.02-1-ga8**
FPGA (GPU Tray)	**1.73**
Astera Labs Gen5 PCIe Retimer (GPU Tray) (PT5161L)	**2.20.20**
Intel E10G Ethernet	v3.60
Intel Ethernet Network Adapter	v4.50

3.3. Firmware Update Procedure

Refer to *Firmware Update Steps*.

Chapter 4. Firmware Changes for NVIDIA DGX B200 Systems

4.1. BMC Changes for DGX B200 Systems

4.1.1. Changes in 25.02.12

- The initial BMC firmware version.

4.2. SBIOS Changes for DGX B200 Systems

4.2.1. Changes in 1.6.7

- Fixed an issue where a boot order setting via Redfish API did not take effect.

4.2.2. Changes in 1.6.6

- The initial SBIOS firmware version.

4.3. nvfwupd Command Changes

4.3.1. Changes in 2.0.5

- Added support for parallel firmware updates through the YAML configuration file.
- Added the `--json` option to the `update_fw`, `show_update_progress`, and `force_update` commands.
- Added IPv6 support.
- Deprecated the `targets` sub-option for multi-target input. Use `config.yaml` input instead.

Chapter 5. Firmware Update Steps

5.1. Before You Begin

- Stop all unnecessary system activity before you begin the firmware update.
- Stop all GPU activity, including running the `nvidia-smi` command. GPU activity and running the command can prevent the VBIOS update.
- Do not add additional loads on the system, such as user jobs, diagnostics, or monitoring services, while an update is in progress. A high workload can disrupt the firmware update process and result in an unusable component.
- When you begin the firmware update, the update software assists in determining the activity state of the DGX system and provides a warning if it detects that activity levels are above a pre-determined threshold. If you encounter the warning, take action to reduce the workload before proceeding with the firmware update.
- Fan speeds can increase during the BMC firmware update. This increase in speed is a normal part of the BMC firmware update process.

5.2. Update Steps

1. View the installed versions compared with the newly available firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-password>
↪ \
  show_version -p nvfw_DGX_250220.1.0.fwpkg \
  nvfw_DGX-HGX-B100-B200x8_250114.1.0.fwpkg
```

2. Update the BMC.
    1. Create a file, such as `update_bmc.json`, with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/HostBMC_0
↪"]
}
```

    2. Run the following command to update the BMC:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-
↪password> update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s update_bmc.json
```

3. Reboot the BMC.

```
$ ipmitool mc reset cold
```

Wait a couple of minutes and then confirm the BMC is back online.

- Use the system shell:

```
$ ipmitool mc info
```

- Alternatively, you can access the Web UI through a browser.

4. Update the components on the motherboard tray.

For a one-shot firmware update, the BMC will perform a firmware update on all components in the provided bundle, for example, `nvfw_DGX_xxxxxx.x.x.fwpkg`, which includes the Host BMC (if the `force_update` option is specified), Host BIOS, EROT, PCIe Retimer, PCIe Switch, PSU, Motherboard CPLD, and Midplane CPLD.

1. Create a file, such as `mb_tray.json`, with empty braces:

```
{}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-
↪password> update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s mb_tray.json
```

5. Update the GPU tray to the **intermediate** firmware version using the transition GPU package.

1. Create a `gpu_tray.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/HGX_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-
↪password> update_fw \
  -p nvfw_DGX-HGX-B100-B200x8_250114.1.0.fwpkg -y -s gpu_tray.json
```

This step performs parallel updates on all the components contained in the GPU tray, such as VBIOS, NVSwitch, EROTs, and FPGA.

3. Verify that the background copy has been completed successfully by looking for `"BackgroundCopyStatus": "Completed"` in the following command output:

```
curl -s -k -u <bmc-user>:<bmc-password> -H content-type:application/
↪json \
    -X GET https://<bmc-ip-address>/redfish/v1/Chassis/HGX_ERoT_BMC_
↪0 | jq
```

4. Perform a cold reset to restart the system:

```
ipmitool chassis power cycle
```

6. Update the GPU tray to the **latest** firmware version.

   1. Repeat the firmware update step for the GPU tray using the latest GPU package:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-
↪password> update_fw \
  -p nvfw_DGX-HGX-B100-B200x8_250302.1.3.fwpkg -y -s gpu_tray.json
```

   2. Perform a DC power cycle on the system and confirm that it boots completely.

      Execute a poweroff on the command line in the OS or from the BMC, followed by powering on from the BMC.

7. Confirm the firmware update is complete by viewing the installed versions again.

   After the system is operational again, repeat the following command to confirm all firmware has been updated:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-password>
↪ \
  show_version -p nvfw_DGX_250220.1.0.fwpkg \
  nvfw_DGX-HGX-B100-B200x8_250302.1.3.fwpkg
```

8. Execute background copy commands for the BMC and the system BIOS.

   1. BMC:

      Background copy Redfish API request:

```
curl -k -u <bmc-user>:<password> --request POST --location 'https://
↪<bmc-ip-address>/redfish/v1/UpdateService/Actions/Oem/
↪NvidiaUpdateService.CommitImage' \
    --header 'Content-Type: application/json' \
    --data '{
             "Targets": ["/redfish/v1/UpdateService/FirmwareInventory/
↪HostBMC_0"]
             }'
```

      Example response:

```
{
   "@odata.type":"#UpdateService.v1_11_0.UpdateService",
   "Messages":[
      {
         "@odata.type":"#Message.v1_0_8.Message",
         "Message":"A new task /redfish/v1/TaskService/Tasks/1 was
↪created.",
         "MessageArgs":[
            "/redfish/v1/TaskService/Tasks/1"
         ],
         "MessageId":"Task.1.0.New",
         "Resolution":"None",
         "Severity":"OK"
```

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```
      },
      {
         "@odata.type":"#Message.v1_0_8.Message",
         "Message":"ActivateFirmware Action is initiated.",
         "MessageId":"UpdateService.1.0.StartActivateFirmware",
         "Resolution":"None",
         "Severity":"OK"
      }
   ]
}
```


Query the update status using the task ID, which is 1, as shown in the output response:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-
↪password> show_update_progress -i 1
```

When the status indicates 100% complete, proceed with the next step.

2. SBIOS:

   Background copy Redfish API request:

```
curl -k -u <bmc-user>:<password> --request POST --location 'https://
↪<bmc-ip-address>/redfish/v1/UpdateService/Actions/Oem/
↪NvidiaUpdateService.CommitImage' \
    --header 'Content-Type: application/json' \
    --data '{
            "Targets": ["/redfish/v1/UpdateService/FirmwareInventory/
↪HostBIOS_0"]
            }'
```

   Find the task ID from the response, which is usually 2, to query the update status:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-
↪password> show_update_progress -i 2
```

   When the status indicates 100% complete, proceed with the next step.

3. Perform an AC power cycle on the system by unplugging all the power supplies and then reconnecting them either manually or through an external PDU device.

9. Update firmware on the network cards and NVMe drives.

Note

During the update, the `mlxfwmanager` command will report the ConnectX-7 device identified as `/dev/mst/mt4129_pciconf0` cannot be updated as shown in the following error message:

```
-E- Failed to query /dev/mst/mt4129_pciconf0 device, error : MFE_ICMD_
↪BAD_PARAM
```

This behavior is expected because this device is not one of the networking cards used to cluster the system, but a bridge device used internally and updated using a separate process.

1. To update the ConnectX®-7 cards and NVIDIA® BlueField®-3 cards, navigate to the `network` directory and run the `mlxfwmanager` command:

   ```
   cd network
   sudo mlxfwmanager -u -D .
   ```

   When prompted to update all 10 ConnectX-7 cards and BlueField-3 cards, type Y to confirm.

   For a complete output, refer to *Firmware Update Output of mlxfwmanager*.

2. For firmware update on the Intel E810-C Ethernet Network Adapters, refer to *Updating the Intel NIC Firmware*.

3. For firmware update on the NVMe drives, refer to *Updating the NVMe Firmware*.

5.2.1. Firmware Update Output of mlxfwmanager

```
$ sudo mlxfwmanager -u -D .
Querying Mellanox devices firmware ...

Device #1:
----------

Device Type:      ConnectX7
Part Number:      --
Description:
PSID:
PCI Device Name:  /dev/mst/mt4129_pciconf0
Base GUID:        N/A
Base MAC:         N/A
Versions:         Current        Available
   FW:            --
Status:           Failed to open device

Device #2:
----------

Device Type:      ConnectX7
Part Number:      MCX750500B-0D00_Ax_Bx
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf1
Base GUID:        b8e924030081db74
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #3:
----------
```

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```
Device Type:      ConnectX7
Part Number:      MCX750500B-0D00_Ax_Bx
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
 ↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
 ↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf2
Base GUID:        b8e924030081db7c
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #4:
----------

Device Type:      ConnectX7
Part Number:      MCX750500B-0D00_Ax_Bx
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
 ↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
 ↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf3
Base GUID:        b8e924030081db78
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #5:
----------

Device Type:      ConnectX7
Part Number:      MCX750500B-0D00_Ax_Bx
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
 ↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
 ↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf4
Base GUID:        b8e924030081db70
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #6:
----------

Device Type:      ConnectX7
```

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```
Part Number:      MCX750500B-0D00_Ax_Bx
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf5
Base GUID:        b8e924030081d954
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #7:
----------

Device Type:      ConnectX7
Part Number:      MCX750500B-0D00_Ax_Bx
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf6
Base GUID:        b8e924030081d95c
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #8:
----------

Device Type:      ConnectX7
Part Number:      MCX750500B-0D00_Ax_Bx
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf7
Base GUID:        b8e924030081d958
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #9:
----------

Device Type:      ConnectX7
Part Number:      MCX750500B-0D00_Ax_Bx
```

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```
Description:      Nvidia adapter card with four ConnectX-7; each up to 400Gb/
 ↪s IB (default mode) or 400GbE; PCIe 5.0 x32; PCIe switch; crypto disabled;
 ↪secure boot enabled
PSID:             MT_0000000891
PCI Device Name:  /dev/mst/mt4129_pciconf8
Base GUID:        b8e924030081d950
Versions:         Current        Available
   FW:            28.42.1000     28.43.2026
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
Status:           Update required

Device #10:
----------

Device Type:      BlueField3
Part Number:      900-9D3B6-00CN-A_Ax
Description:      NVIDIA BlueField-3 B3240 P-Series Dual-slot FHHL DPU;
 ↪400GbE / NDR IB (default mode); Dual-port QSFP112; PCIe Gen5.0 x16 with x16
 ↪PCIe extension option; 16 Arm cores; 32GB on-board DDR; integrated BMC;
 ↪Crypto Enabled
PSID:             MT_0000000883
PCI Device Name:  /dev/mst/mt41692_pciconf0
Base GUID:        b8e9240300a65e18
Base MAC:         b8e924a65e18
Versions:         Current        Available
   FW:            32.42.1000     32.43.2024
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
   UEFI Virtio blk:   22.4.0013      N/A
   UEFI Virtio net:   21.4.0013      N/A
Status:           Update required

Device #11:
----------

Device Type:      BlueField3
Part Number:      900-9D3B6-00CN-A_Ax
Description:      NVIDIA BlueField-3 B3240 P-Series Dual-slot FHHL DPU;
 ↪400GbE / NDR IB (default mode); Dual-port QSFP112; PCIe Gen5.0 x16 with x16
 ↪PCIe extension option; 16 Arm cores; 32GB on-board DDR; integrated BMC;
 ↪Crypto Enabled
PSID:             MT_0000000883
PCI Device Name:  /dev/mst/mt41692_pciconf1
Base GUID:        b8e9240300a667be
Base MAC:         b8e924a667be
Versions:         Current        Available
   FW:            32.42.1000     32.43.2024
   PXE:           3.7.0500       N/A
   UEFI:          14.35.0015     N/A
   UEFI Virtio blk:   22.4.0013      N/A
   UEFI Virtio net:   21.4.0013      N/A
```

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```
Status:           Update required


---------
-E- Failed to query /dev/mst/mt4129_pciconf0 device, error : MFE_ICMD_BAD_
↪PARAM
Found 10 device(s) requiring firmware update...

Perform FW update? [y/N]: y
Device #1: Device query failed
Device #2: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #3: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #4: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #5: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #6: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #7: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #8: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #9: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #10: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done
Device #11: Updating FW ...
FSMST_INITIALIZE -   OK
Writing Boot image component -   OK
Done

Restart needed for updates to take effect.
```

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```
-E- One or more errors were encountered.
```

Chapter 6. Known Issues

- *Functional Issues*
- *VBIOS Incompatibility Issue*
- *Misleading Messages During Firmware Update*
- *Firmware Inventory Can Be Invalid During Boot*
- *BMC Slow Startup After AC Power Cycle*
- *Temperature Sensors Can Report No Reading*

6.1. Functional Issues

- You cannot update firmware of the individual components of the DGX B200 GPU tray. For example, you can not individually update the firmware for the GPU only. You must update the firmware by flashing the entire DGX B200 GPU tray.
- Firmware download is not automatic. You must download the firmware manually from the NVIDIA Enterprise Support Portal.

6.2. VBIOS Incompatibility Issue

6.2.1. Issue

Updating directly from a version earlier than 97.00.5E.00.XX to a version later than 97.00.7C.00.XX might fail. When using the Redfish method, you might see an error similar to the following:

```
{
  "@odata.type": "#MessageRegistry.v1_4_1.MessageRegistry",
  "Message": "Verification of image '97.00.7C.00.05' at HGX_FW_GPU_SXM_4'
↪failed.
  "MessageArgs": [
        "97.00.7C.00.05",
        "HGX_FW_GPU_SXM_4"
      ],
  "MessageID": "Update.1.0.VerificationFailed",
```

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```
  "Resolution": "None.".
  "Severity": "Critical"
}
```

6.2.2. Explanation

VBIOS firmware data structures in versions earlier than 97.00.5E.00.XX and versions later than 97.00.7C.00.XX are incompatible.

6.2.3. Workaround

If your current VBIOS version is:

- 97.00.5E.00.XX or later:

  Update to the latest VBIOS version directly.

- Earlier than 97.00.5E.00.XX:

  Follow these steps:

  1. Update to a version between 97.00.5E.00.XX and 97.00.7C.00.XX.
  2. Then, update to the latest version.

6.3. Misleading Messages During Firmware Update

6.3.1. Issue

During the process of the ConnectX-7 firmware update, upon completion of applying the update, a reboot is required as suggested by these messages: `To load new FW, run mlxfwreset or reboot machine.` and `Please reboot machine to load new configurations.` However, rebooting the system does not load the firmware update or new configurations properly for the ConnectX-7 firmware versions 28.36.1010 and later.

6.3.2. Workaround

For the firmware update and new configurations to load successfully, perform an AC power cycle on the system instead of rebooting.

6.4. Firmware Inventory Can Be Invalid During Boot

6.4.1. Issue

In rare instances, polling the firmware inventory endpoint of the BMC Redfish API can report an inaccurate firmware versions for the HGX_0 component.

6.4.2. Workaround

Query the firmware inventory after the system completes the boot sequence to retrieve the current firmware inventory.

6.5. BMC Slow Startup After AC Power Cycle

6.5.1. Issue

After an AC power cycle, the BMC can require approximately 10 minutes before it is available for communication. The BMC is typically available within three minutes.

6.5.2. Workaround

No workaround is available.

6.6. Temperature Sensors Can Report No Reading

6.6.1. Issue

The following sensors can report `No Reading` rather than a temperature value:

- TEMP_PSU4
- TEMP_PSU5
- PWR_PSU5
- SPD_FAN_PSU5_R
- SPD_FAN_PSU5_R
- STATUS_PSU0
- STATUS_PSU1
- STATUS_PSU2
- STATUS_PSU3
- STATUS_PSU4
- STATUS_PSU5
- STATUS_HMC

- TEMP_PCIE_SW_1
- TEMP_Cedar_OSFP0
- TEMP_Cedar_OSFP1
- TEMP_Cedar_OSFP2
- TEMP_Cedar_OSFP3
- TEMP_PCIE_CX7_1
- TEMP_PCIE_CX7_2
- TEMP_CX7_QSFP0
- TEMP_CX7_QSFP1
- TEMP_CX7_QSFP2
- TEMP_CX7_QSFP3
- TEMP_Intel_NIC
- TEMP_NIC_QSFP0
- TEMP_NIC_QSFP1

6.6.2. Workaround

Polling the sensors again can resolve the issue.

Chapter 7. Getting Started with nvdebug

The NVIDIA® NVDebug tool, `nvdebug`, runs on server platforms or from remote client machines. This binary tool, which is available for x86_64 or arm64-SBSA architecture systems, collects the following information:

- Out-of-band (OOB) BMC logs and information for troubleshooting server issues
- Logs from the host

7.1. Requirements

Table 1: Requirements for Client Host and Server Host

Requirement	Client Host	Server Host
Linux-based operating system: Linux kernel 4.4 or later supported (version 4.15 or later recommended)	X	X
GNU C Library glibc-2.7 or later	X	X
OS: Ubuntu 18.04 or later supported (Ubuntu 22.04 recommended)	X	X
Python 3.10	X	X
`ipmitool` 1.8.18 or later	X	X
The `sshpass` command	X	X
A server device under test (DUT) accessible by the BMC from the client host using Redfish and IPMI-over-LAN.	X	X
The `nvme-cli` tool		X
BMC Management and Server Host Management networks are in the same subnet.		X

NVSwitch tray host requires NVOS version 2.

7.2. The nvdebug Command-Line Interface

The high-level syntax of the `nvdebug` command supports the collection of debug logs over OOB.

You can run the tool in either of the following ways:

- From a remote machine with access to the BMC and host.
- Directly on the host machine if the host can access the BMC.

If the host IP is passed through the configuration file or the command-line interface (CLI) using `-I/--hostip`, `nvdebug` assumes the tool runs on a remote machine. Otherwise, `nvdebug` assumes the tool runs on the host and collects the host logs locally.

7.2.1. Syntax

```
$ nvdebug -i <BMCIP> -u <BMCUSER> -p <BMCPASS> -t <PLATFORM>

Mandatory options:
    -i/--ip is the BMC IP address.
    -u/--user is BMC username with administrative privileges.
    -p/--password is BMC administrative user password.
    -t/--platform is the platform type of the DUT, and it accepts DGX, HGX-
↪HMC, arm64, x86_64, and NVSwitch.

Additional credentials:
    -r/--sshuser is BMC SSH username.
    -w/--sshpass is BMC SSH password.
    -R/--rfuser is BMC Redfish username.
    -W/--rfpass is BMC Redfish password.

Host options:
    -I/--hostip is the Host IP Address.
     If the IP address is not provided, the tool assumes it is running on the
↪host machine.
    -U/--hostuser is the Host username with administrative privileges.
    -H/--hostpass is the Host password.

Additional options:
    -b/--baseboard <baseboard> is the baseboard type, such as Hopper-HGX-8-
↪GPU and Blackwell-HGX-8-GPU.
    -C/--config <file path> is the path to the config file. The default is ./
↪config.yaml.
    -d/--dutconfig <dut config path> is the path to the DUT specific config
↪file.
     The default path is ./dut_config.yaml.
    -c/--common collects the common logs using the included common.json file.
    -v/--verbose displays the detailed output and error messages.
    -o/--outdir <output dir> the output directory where the output is
↪generated.
     The default location is /tmp.
    -P/--port <fw_port> is the port number that will be used for forwarding.
     The --port variable applies only to HGX-Baseboard based platforms,
     and the default value is 18888.
    --local enables Local Execution mode.
    -z/--skipzip skips zipping individual DUT folders.


Log collection options:
    -S/--cids CID [CID ...] runs the log collectors that correspond to the
↪CIDs that were passed.
    -g/--loggroup <Redfish|IPMI|SSH|Host|HealthCheck> runs all log collectors
↪of a specific type
     that is supported on the current platform.
     Only one collector group can be specified.
    -j/--vendor_file <vendor.json> is a vendor-defined JSON file that uses
↪proprietary methods
```

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```
     and tools as defined by the user.
     The -S and –g options cannot be used together.

Utility options:
    -h/--help and --version are standalone options, and –l/--list requires
↪the platform
     type to be specified using –t/--platform.
    --parse <log dump> parses an nvdebug log dump and decodes the binary data.
    -h/--help provides information about tool usage.
    --version displays the current version of the tool.
    -l/--list [Redfish|IPMI|SSH|Host|HealthCheck] lists log collectors that
↪are supported by platform
     with their collector IDs (CID). If a type is passed, it will only list
↪log collectors
     of that type. The -l/--list options require the target platform type to
↪be specified with –t/--platform.

    By default, if option -c is not included, the nvdebug tool will collect
↪logs based on the common.json
    and platform_xyz.json files. At the end of the run, the tool will
↪generate the output log xyz.zip
    file in the directory specified by the –o option. If no directory is
↪provided, the log
    will be generated in the /tmp directory.
```

7.2.2. The Configuration Files

The NVDebug tool has two configuration files in the same folder as the executable:

- The DUT configuration file: The default is `dut_config.yaml`.
- The NVDebug-specific configuration file: The default is `config.yaml`.

These files can be used to provide additional (but optional) configuration data. If an argument is provided by both the CLI and the configuration file, the value provided through the CLI takes precedence.

7.3. HGX B200 8-GPU Example

To communicate with the HGX baseboard, you need the BMC SSH credentials to set up SSH tunneling through the BMC. By default, the SSH credentials are assumed to be the same as the BMC credentials. To use different credentials, specify the `–r` and `–w` CLI options for the SSH username and password, respectively.

```
nvdebug –i $BMCIP –u $BMCUSER –p $BMCPASS –r SSHUSER –w SSHPASS –t HGX-HMC –P
↪port_num

Log directory created at /tmp/nvdebug_logs_30_09_2024_12_27_46
Starting a collection for DUT dut-1
hgx-b200-node2: [12:28:13] Identified system as Model: P2312-A04, Partno: 692-
↪22312-0001-000, Serialno:1324623011823
```

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```
hgx-b200-node2: [12:28:13] User provided platform type: HGX-HMC
hgx-b200-node2: [12:28:13] BMC IP: XXXX

Log collection has started for dut-1
hgx-b200-node2: [12:45:43] Log collection is now complete
hgx-b200-node2: [12:45:43] Log collection took 17m 30.29s
DUT hgx-b200-node2 completed.

The log zip file (:literal:`nvdebug_logs_30_09_2024_12_27_46.zip`) will be
↪created in the :literal:`/tmp` directory.
```

The SSH tunnel is set up automatically by the tool using the specified port, and the default value is 18888. To use an existing SSH tunnel, do not set up SSH tunnelling in the configuration file, as shown in the following `dut_config` file:

```
hgx-b200-node2:
  <<: *dut_defaults
  BMC_IP: "bmc_ip"
  BMC_USERNAME: "bmc_user"
  BMC_PASSWORD: "bmc_pass"
  BMC_SSH_USERNAME: "ssh_user"
  BMC_SSH_PASSWORD: "ssh_pass"
  TUNNEL_TCP_PORT: "port_num"

  SETUP_PORT_FORWARDING: false
```

After configuring the NVDebug tool, run the `nvdebug` command:

Note

The Host BMC needs to support port forwarding.

Example output:

```
$ nvdebug

Log directory created at /tmp/nvdebug_logs_30_09_2024_12_27_46
Starting a collection for DUT hgx-b200-node2
hgx-b200-node2: [12:28:13] Identified system as Model: P2312-A04, Partno: 692-
↪22312-0001-000, Serialno:1324623011823
hgx-b200-node2: [12:28:13] User provided platform type: HGX-HMC
hgx-b200-node2: [12:28:13] BMC IP: XXXX

Log collection has started for hgx-b200-node2
hgx-b200-node2: [12:45:43] Log collection is now complete
hgx-b200-node2: [12:45:43] Log collection took 17m 30.29s
DUT hgx-b200-node2 completed.

The log zip file (nvdebug_logs_30_09_2024_12_27_46.zip) will be created in
↪the /tmp directory.
```

7.4. DGX Platform Example

To list the collectors that are available on a DGX platform, specify the `-l` option and the `-t DGX` option for log collectors and the DGX platform, respectively:

```
$ nvdebug -l -t DGX
```

Example output:

```
Redfish
  CID    Collector Name                          Log Location
   R8    firmware_inventory                      Redfish_R8_firmware_
↪inventory.json
   R9    firmware_inventory_expand_query         Redfish_R9_firmware_
↪inventory_expand_query.json
  R10    chassis_info                            Redfish_R10_chassis_info.json
  R11    chassis_expand_query                    Redfish_R11_chassis_expand_
↪query.json
  R12    system_info                             Redfish_R12_system_info.json
  R13    system_expand_query                     Redfish_R13_system_expand_
↪query.json
  R14    manager_info                            Redfish_R14_manager_info.json
  R15    manager_expand_query                    Redfish_R15_manager_expand_
↪query.json
  R17    dgx_manager_oem_log_dump                Redfish_R17_dgx_oem_dump_
↪{manager_id}_{task_id}.tar.xz
  R18    telemetry_metric_reports                Redfish_R18_report_{metric_
↪report}.json
  R19    chassis_thermal_metrics                 Redfish_R19_chassis_{chassis}
↪_thermal_metrics.json
  R20    firmware_inventory_table                Redfish_R20_firmware_
↪inventory_table.txt
  R22    task_details                            Redfish_R22_task_{task_id}.
↪json
  R23    nvlink_oob_logs                         Redfish_R23_NVLINK_OOB_Log_
↪{id}.json
  R25    additional_oob_logs                     Redfish_R25_OOB_Log_{id}.json
  R26    chassis_certificates                    Redfish_R26_chassis_{chassis_
↪id}_certificate.json
  R29    background_copy_status                  Redfish_R29_{chassis_id}_
↪copy_status.json
  R30    software_inventory                      Redfish_R30_software_
↪inventory
  R32    system_post_codes                       Redfish_R32_system_post_codes

IPMI
  CID    Collector Name                          Log Location
   I1    mc_info                                 IPMI_I1_mc_info.txt
   I2    lan_info                                IPMI_I2_lan_info.txt
   I3    session_info                            IPMI_I3_session_info.txt
   I4    fru_info                                IPMI_I4_fru_info.txt
   I5    sdr_info                                IPMI_I5_sdr_info.txt
   I6    sel_info                                IPMI_I6_sel_info.txt
```

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```
   I7    sensor_list                          IPMI_I7_sensor_list.txt
   I8    sel_list                             IPMI_I8_sel_list.txt
   I9    sel_raw_dump                         IPMI_I9_sel_raw_dump.txt
  I10    chassis_status                       IPMI_I10_chassis_status.txt
  I11    chassis_restart_cause                IPMI_I11_chassis_restart_
↪cause.txt
  I12    user_list                            IPMI_I12_user_list.txt
  I13    channel_info                         IPMI_I13_channel_info.txt
  I14    sdr_elist                            IPMI_I14_sdr_elist.txt

SSH
  CID    Collector Name                       Log Location
   S2    bmc_dmesg                            BMC_SSH_S2_bmc_dmesg.txt
   S3    network_info                         BMC_SSH_S3_network_info/...
   S5    bmc_list_kernel_modules              BMC_SSH_S5_bmc_list_kernel_
↪modules.txt
   S8    bmc_mem_cpu_utilization              BMC_SSH_S8_bmc_mem_cpu_
↪utilization/...
  S11    uptime                               BMC_SSH_S11_uptime.txt
  S12    fpga_register_table                  BMC_SSH_S12_fpga_register_
↪table.txt
  S13    hmc_boot_status                      BMC_SSH_S13_hmc_boot_status.
↪txt
  S15    bmc_power_status                     BMC_SSH_S15_bmc_power_status/
↪...

Host
  CID    Collector Name                       Log Location
   H1    node_dmesg                           Host_H1_node_dmesg.tar.gz
   H2    node_lspci                           Host_H2_node_lspci*.txt
   H3    node_smbios                          Host_H3_dmidecode*.txt
   H4    node_lshw                            Host_H4_lshw*.txt
   H5    node_nvidia_smi                      Host_H5_nvidia-smi*.txt
   H6    node_kern_log                        Host_H6_node_kern_log.tar.gz
   H7    node_crash_dump                      Host_H7_node_crash_dump.tar.
↪gz
   H8    node_nvme_list                       Host_H8_nvme_list_-v.txt
   H9    node_fabric_manager_log              Host_H9_fabricmanager.log
  H10    node_nvflash_log                     Host_H10_nvflash_--check_-i_
↪{num}.txt
  H11    nvidia_bug_report                    Host_H11_nvidia_bug_report_
↪op.log.gz
  H15    node_subnet_manager                  Host_H15_node_subnet_manager/
  H16    one_diag_dump                        Host_H16_one_diag_dump/
  H17    node_nvme_log_dump                   Host_H17_nvos_tech_support_
↪dump/

HealthCheck
  CID    Collector Name                       Log Location
   C1    out_of_band_health_check             HealthCheck_C1_out_of_band_
↪health_check.json
```

7.5. Redfish Collectors

To collect only specific collectors, specify the -S option for firmware inventory, system information, and ipmi manager information.

```
nvdebug -i <bmc_ip> -u <bmc_user> -p <bmc_pass> ... -t DGX -v -S R8 I1 R12
```

Example output:

```
Log directory created at /tmp/nvdebug_logs_06_11_2024_15_40_27
Starting a collection for DUT dut-1
dut-1: [15:40:34] All preflight checks passed
dut-1: [15:40:34] Identified system as Model: DGXB200, Partno: 965-24387-0002-
↪003, Serialno:1660224000069
dut-1: [15:40:34] User provided platform type: DGX
dut-1: [15:40:34] BMC IP: XXXX
Log collection has started for dut-1
dut-1: [15:40:34]
dut-1: [15:40:34] ####################################
dut-1: [15:40:34]
dut-1: [15:40:34] Collecting custom logs:
dut-1: [15:40:34]
dut-1: [15:40:34] Log collection was initiated for: r8_firmware_inventory
dut-1: [15:40:36] Log collection for r8_firmware_inventory took 0m 1.71s
dut-1: [15:40:36] Log collection was initiated for: r12_system_info
dut-1: [15:40:36] Log collection for r12_system_info took 0m 0.06s
dut-1: [15:40:36] Log collection was initiated for: i1_mc_info
dut-1: [15:40:36] Log collection for i1_mc_info took 0m 0.14s
dut-1: [15:40:36] Log collection is now complete
dut-1: [15:40:36] Log collection took 0m 2.16s
DUT dut-1 completed.
Log zip created at /tmp/nvdebug_logs_06_11_2024_15_40_27.zip
```

To run the Redfish log collectors, specify the -g option for the Redfish log group:

```
$ nvdebug -i $BMC_IP -u $BMC_USER -p $BMC_PASS -t DGX -g Redfish
```

7.6. IPv6 Configuration

By default, the nvdebug tool uses IPv4. For IPv6, set IP_NETWORK to ipv6 in the DUT configuration. When providing IPv6 addresses for the BMC/Host, do not use square brackets.

Chapter 8. Viewing the Installed Firmware and Package Versions

Perform the following steps to view the firmware versions that are installed on the system and the versions in the firmware update packages.

- Compare the installed firmware versions with the versions available in the packages:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-password>
 ↪ \
  show_version -p nvfw_DGX_250220.1.0.fwpkg \
  nvfw_DGX-HGX-B100-B200x8_250302.1.3.fwpkg
```

  Replace the firmware package file names with the file names that you downloaded.

> **Tip**
>
> If you run the `nvfwupd show_version` command without any arguments, the command displays the currently installed firmware versions.

  Example Output

```
System Model: DGXB200
Part number: xxx-xxxxx-xxxx-xxx
Serial number: xxxxxxxxxxxx
BMC IP: 192.168.1.1

Firmware Devices:
AP Name                         Sys Version                     Pkg Version
 ↪                 Up-To-Date
-------                         -----------                     -----------
 ↪                 ----------
CPLDMB_0                        0.2.1.6                         0.2.1.6
 ↪                   Yes
CPLDMID_0                       0.2.0.7                         0.2.0.7
 ↪                   Yes
EROT_BIOS_0                     00.04.0011.0000_n00             00.04.0018.
 ↪0000_n00             No
```

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```
EROT_BMC_0                      00.04.0011.0000_n00             00.04.0018.
↪0000_n00            No
HGX_FW_BMC_0                    HGX-22.10-1-rc31                HGX-23.03-
↪09-rc01              No
HGX_FW_ERoT_BMC_0               00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_FPGA_0              00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_1           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_2           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_3           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_4           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_5           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_6           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_7           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_GPU_SXM_8           00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_NVSwitch_0          00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_NVSwitch_1          00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_NVSwitch_2          00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_NVSwitch_3          00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_ERoT_PCIeSwitch_0        00.02.0120.0000_n00             00.02.0114.
↪0001_n00            Yes
HGX_FW_FPGA_0                   2.0D                            2.09
↪                    Yes
HGX_FW_GPU_SXM_1                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
HGX_FW_GPU_SXM_2                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
HGX_FW_GPU_SXM_3                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
HGX_FW_GPU_SXM_4                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
HGX_FW_GPU_SXM_5                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
HGX_FW_GPU_SXM_6                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
HGX_FW_GPU_SXM_7                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
HGX_FW_GPU_SXM_8                96.00.61.00.01                  96.00.5E.00.
↪00                  Yes
```

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```
HGX_FW_NVSwitch_0               96.10.35.00.02                  96.10.2E.00.
↪00                 Yes
HGX_FW_NVSwitch_1               96.10.35.00.02                  96.10.2E.00.
↪00                 Yes
HGX_FW_NVSwitch_2               96.10.35.00.02                  96.10.2E.00.
↪00                 Yes
HGX_FW_NVSwitch_3               96.10.35.00.02                  96.10.2E.00.
↪00                 Yes
HGX_FW_PCIeRetimer_0            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeRetimer_1            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeRetimer_2            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeRetimer_3            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeRetimer_4            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeRetimer_5            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeRetimer_6            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeRetimer_7            1.31.7                          1.31.7
↪                   Yes
HGX_FW_PCIeSwitch_0             1.7.5F                          1.7.5F
↪                   Yes
HGX_InfoROM_GPU_SXM_1           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_GPU_SXM_2           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_GPU_SXM_3           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_GPU_SXM_4           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_GPU_SXM_5           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_GPU_SXM_6           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_GPU_SXM_7           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_GPU_SXM_8           G520.0200.00.01                 N/A
↪                   No
HGX_InfoROM_NVSwitch_0          5612.0002.00.01                 N/A
↪                   No
HGX_InfoROM_NVSwitch_1          5612.0002.00.01                 N/A
↪                   No
HGX_InfoROM_NVSwitch_2          5612.0002.00.01                 N/A
↪                   No
HGX_InfoROM_NVSwitch_3          5612.0002.00.01                 N/A
↪                   No
HostBIOS_0                      01.00.04                        01.00.04
↪                   Yes
```

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```
HostBMC_0                         23.04.18                        44.04.19
↪                    No
PCIeRetimer_0                     1.30.12                         1.30.0
↪                    Yes
PCIeRetimer_1                     1.30.12                         1.30.0
↪                    Yes
PCIeSwitch_0                      0.0.6                           00.06.78
↪                    No
PCIeSwitch_1                      1.0.6                           01.06.78
↪                    No
PSU_0                             0202.0201.0202                  0202.0201.
↪0202                 Yes
PSU_1                             0202.0201.0202                  0202.0201.
↪0202                 Yes
PSU_2                             0202.0201.0202                  0202.0201.
↪0202                 Yes
PSU_3                             0202.0201.0202                  0202.0201.
↪0202                 Yes
PSU_4                             0202.0201.0202                  0202.0201.
↪0202                 Yes
PSU_5                             0202.0201.0202                  0202.0201.
↪0202                 Yes
```

HGX Firmware from the GPU tray reports the HGX_InfoRom_GPU_SXM_n and HGX_InfoRom_NVSwitch_n in the firmware inventory Redfish output. As a result, it is included in the preceding output as N/A. In the Up-To-Date column, these entries show No because you cannot update them OOB from the GPU or NVSwitch firmware images respectively.

Chapter 9. Updating the BMC

1. Create a `update_bmc.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/HostBMC_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-password>
 ↪ update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s update_bmc.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg']
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/2 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/2"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 2
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
PercentageComplete: 6
 TaskState: Running
 PercentComplete: 6
 TaskStatus: OK
 ...
```

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```
 PercentageComplete: 100
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:36:11
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
```

3. Reset the BMC so the BMC boots the new firmware:

```
$ ipmitool mc reset cold

# Wait a couple of minutes and confirm the BMC is back online.
$ ipmitool mc info
```

4. Reboot the system.

Chapter 10. Firmware Update of Motherboard Tray: All Components

Perform the following steps to update the firmware on all the system components, such as CPLDs, PSUs, PCIe switches, and so on.

This procedure is an alternative to updating each component individually.

1. Create a `mb_tray.json` file with empty braces, like the following example:

```
{}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-password>
 ↪ update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s mb_tray.json
```

Example Output

```
FW package: ['nvfw_DGX_250220.1.0.fwpkg']
Ok to proceed with firmware update? <Y/N>
y
{"@odata.type": "#UpdateService.v1_11_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/2 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/2"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
  FW update started, Task Id: 2
Wait for Firmware Update to Start...
  TaskState: Running
  PercentComplete: 1
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 20
  TaskStatus: OK
```

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```
  TaskState: Running
  PercentComplete: 40
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 61
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 80
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 99
  TaskStatus: OK
  TaskState: Completed
  PercentComplete: 100
  TaskStatus: OK
  Firmware update successful!
Overall Time Taken: 0:24:38
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
--------------------------------------------------------------------------
 ↪-----------------
```

Chapter 11. Updating BMC EROT on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/EROT_BMC_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg]
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/1 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/1"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 1
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:00:09
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
```

Chapter 12. Updating SBIOS EROT on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/EROT_BIOS_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg.fwpkg]
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/2 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/2"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 2
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:00:10
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
```

Chapter 13. Updating the BIOS on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/HostBIOS_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: [.1nvfw_DGX_250220.1.0.fwpkg']
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/2 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/2"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 2
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
Wait for FirmwareUpdateStarted in MessageId
PercentageComplete: 6
 TaskState: Running
 PercentComplete: 6
 TaskStatus: OK
 ...
```

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```
PercentageComplete: 100
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:36:11
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
```

Chapter 14. Updating the CPLDs on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/CPLDMB_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg]
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/4 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/4"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 4
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:00:08
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
```

Chapter 15. Updating the Midplane CPLDs on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/CPLDMID_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg']
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/5 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/5"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 5
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
  TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:00:09
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
```

Chapter 16. Updating the NVMe Firmware

The following instructions describe how to update the firmware on an NVMe device using the NVME-CLI command-line interface. The `nvme-cli` tool is preinstalled on all DGX B200 systems.

1. List the devices and check the firmware versions.

```
$ sudo nvme list

Node             Generic      SN                Model
 ↪Namespace Usage                      Format           FW Rev
-------------- ------------ ---------------- ----------------------------
 ↪--------- -------------------------- ---------------- --------
/dev/nvme0n1    /dev/ng0n1   S666NN0X307344   SAMSUNG MZ1L21T9HCLS-00A07
 ↪0x1       589.06  TB /   1.92  TB   512   B +  0 B   GDC7502Q
/dev/nvme1n1    /dev/ng1n1   S666NN0X307345   SAMSUNG MZ1L21T9HCLS-00A07
 ↪0x1       589.74  TB /   1.92  TB   512   B +  0 B   GDC7502Q
/dev/nvme2n1    /dev/ng2n1   YEE0A0750LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       247.45  GB /   3.84  TB   512   B +  0 B   1UET7104
/dev/nvme3n1    /dev/ng3n1   YEC0A0XS0LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       175.18  GB /   3.84  TB   512   B +  0 B   1UET7104
/dev/nvme4n1    /dev/ng4n1   9EX0A0GU0LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       188.78  GB /   3.84  TB   512   B +  0 B   1UET7104
/dev/nvme5n1    /dev/ng5n1   YEE0A0AL0LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       188.15  GB /   3.84  TB   512   B +  0 B   1UET7104
/dev/nvme6n1    /dev/ng6n1   YEC0A0XC0LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       175.15  GB /   3.84  TB   512   B +  0 B   1UET7104
/dev/nvme7n1    /dev/ng7n1   9ET0A04T0LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       188.78  GB /   3.84  TB   512   B +  0 B   1UET7104
/dev/nvme8n1    /dev/ng8n1   9ET0A05B0LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       175.15  GB /   3.84  TB   512   B +  0 B   1UET7104
/dev/nvme9n1    /dev/ng9n1   9ET0A04X0LS3     KIOXIA KCMYDRUG3T84
 ↪0x1       175.22  GB /   3.84  TB   512   B +  0 B   1UET7104
```

   From the output, you can find the device names and firmware versions, such as `/dev/nvme0n1` and `GDC7502Q`.

2. Download the firmware you want to upgrade for the NVMe device.

   Based on the command output in step 1, determine the firmware file using the following table and include the correct path to download the firmware:

```
$ sudo nvme fw-download $DeviceName --fw=***(specify the firmware file
↪for upgrade)
```

This table lists the firmware file names for the supported Samsung and Kioxia models:

Manufacturer	Model Number	Firmware File
Samsung	MZ1L21T9HCLS-00A07	General_PM9A3_M.2_GDC7502Q_Noformat.bin
Samsung	MZWLO3T8HCLS-00A07	General_PM1743_U.2_OPPA4B5Q.bin
Kioxia	KCM6DRUL3T84	CM6-SED-0107.std
Kioxia	KCM7DRUL3T84	CM6-SED-0107.std

3. Commit and activate the downloaded firmware immediately without reset by setting the `action` argument to 3.

```
$ sudo nvme fw-commit $DeviceName --action=3
```

4. Verify that the correct firmware version is updated.

```
$ sudo nvme id-ctrl $DeviceName
```

Chapter 17. Updating the Power Supply Units on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/PSU_0"]
}
```

> **Important**
>
> Repeat this procedure for PSU_1 through PSU_5.

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg']
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/6 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/6"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 6
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:00:08
```

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```
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
↪firmware to take effect.
```

Chapter 18. Updating the PCIe Switches on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/PCIeSwitch_0
↪"]
}
```

> **Important**
>
> Repeat this procedure for `PCIeSwitch_1`.

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg]
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
↪redfish/v1/TaskService/Tasks/7 was created.", "MessageArgs": ["/redfish/
↪v1/TaskService/Tasks/7"], "MessageId": "Task.1.0.New", "Resolution":
↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
↪"Message": "The action UpdateService.MultipartPush was submitted to do
↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 7
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
```

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```
 Overall Time Taken: 0:00:09
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
↪firmware to take effect.
```

Chapter 19. Updating the PCIe Retimers on the Motherboard Tray

1. Create a `updparameters.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/PCIeRetimer_0
 ↪"]
}
```

> **Important**
>
> Repeat this procedure for `PCIeRetimer_1`.

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=admin password=admin update_fw \
  -p nvfw_DGX_250220.1.0.fwpkg -y -s updparameters.json
```

Example Output

```
FW recipe: ['nvfw_DGX_250220.1.0.fwpkg]
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/8 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/8"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 8
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
 TaskState: Completed
 PercentComplete: 100
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:00:09
Refer to 'DGX B200 Firmware Update Document' on activation steps for new
 ↪firmware to take effect.
```

Chapter 20. Updating the ConnectX-7 Firmware

After replacing or installing the ConnectX-7 cards, make sure the firmware on the cards is up to date.

Refer to the *component firmware versions table* to find the most recent firmware version.

1. Download the firmware from https://network.nvidia.com/support/firmware/connectx7ib/.

   Download the firmware for both OPN options.
2. Transfer the firmware ZIP file to the DGX system and extract the archive.
3. Update the firmware on the cards that are used for cluster communication:

```
sudo mlxfwmanager -d 5e:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d dc:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d c0:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d 18:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d 40:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d 4f:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d ce:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d 9a:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX750500B-
↪0D00_Ax_Bx-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
```

4. Update the firmware on the cards that are used for storage communication:

```
sudo mlxfwmanager -d aa:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX755206AS-
↪NEA_Ax-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
sudo mlxfwmanager -d 29:00.0 -i fw-ConnectX7-rel-28_43_2026-MCX755206AS-
↪NEA_Ax-UEFI-14.36.21-FlexBoot-3.7.500.signed.bin
```

5. Perform an AC power cycle on the system for the firmware update to take effect.

   Wait for the operating system to boot.
6. After the system starts, log in and confirm the firmware versions are all the same:

```
$ cat /sys/class/infiniband/mlx5_*/fw_ver
```

Chapter 21. Updating the Intel NIC Firmware

The following instructions describe how to update the firmware on the Intel Ethernet Network Adapter E810-C using interactive mode.

1. Download the update package to a temporary directory.
2. Start the update by running the Intel Ethernet NVM Update Tool `nvmupdate64e`.

   ```
   sudo ./nvmupdate64e
   ```

3. Follow the prompts to update the NVM image on the network adapter.

   Example output:

```
$ sudo ./nvmupdate64e

Intel(R) Ethernet NVM Update Tool
NVMUpdate version 1.41.3.3
Copyright(C) 2013 - 2024 Intel Corporation.


WARNING: To avoid damage to your device, do not stop the update or reboot
 ↪or power off the system during this update.
Inventory in progress. Please wait [***.......]


Num Description                          Ver.(hex)  DevId S:B    Status
=== ==================================== ============ ===== ======
 ↪==============
01) Intel(R) Ethernet Controller          N/A(N/A)   1563 00:011 Update
 ↪not
    X550-T2                                                     available
02) Intel(R) Ethernet Network Adapter   2.80(2.50)   1592 00:130 Update
    E810-C-Q2                                                   available

Options: Adapter Index List (comma-separated), [A]ll, e[X]it
Enter selection: 02
Would you like to back up the NVM images? [Y]es/[N]o: Y
Update in progress. This operation may take several minutes.
[*+........]
```

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```
Num Description                          Ver.(hex)  DevId S:B    Status
=== ================================== ============ ===== ======
 ↪==============
01) Intel(R) Ethernet Controller          N/A(N/A)   1563 00:011 Update
 ↪not
    X550-T2                                                     available
02) Intel(R) Ethernet Network Adapter   2.80(2.50)   1592 00:130 Update
    E810-C-Q2
 ↪successful

A reboot is required to complete the update process.

Tool execution completed with the following status: All operations
 ↪completed successfully.
Press any key to exit.
```

4. Perform an AC power cycle on the system for the firmware update to take effect.

   Wait for the operating system to boot.

Chapter 22. Firmware Update of GPU Tray: All Components

Perform the following steps to update the firmware on all the components in the GPU tray, such as GPUs, NVSwitches, and so on.

1. Create a `gpu_tray.json` file with the following contents:

```
{
    "Targets" :["/redfish/v1/UpdateService/FirmwareInventory/HGX_0"]
}
```

2. Update the firmware:

```
nvfwupd -t ip=<bmc-ip-address> user=<bmc-username> password=<bmc-password>
 ↪ update_fw \
  -p nvfw_DGX-HGX-B100-B200x8_250302.1.3.fwpkg -y -s gpu_tray.json
```

Example Output

```
FW recipe: ['HGX_DGXB100-B200x8_250302.1.3.fwpkg']
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{
 ↪"@odata.type": "#Message.v1_0_8.Message", "Message": "A new task /
 ↪redfish/v1/TaskService/Tasks/3 was created.", "MessageArgs": ["/redfish/
 ↪v1/TaskService/Tasks/3"], "MessageId": "Task.1.0.New", "Resolution":
 ↪"None", "Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message",
 ↪"Message": "The action UpdateService.MultipartPush was submitted to do
 ↪firmware update.", "MessageArgs": ["UpdateService.MultipartPush"],
 ↪"MessageId": "UpdateService.1.0.StartFirmwareUpdate", "Resolution":
 ↪"None", "Severity": "OK"}]}
 FW update started, Task Id: 3
Wait for Firmware Update to Start...
Wait for Firmware Update to Start...
 Started Updating: HGX_0
 TaskState: Running
 PercentComplete: 20
 TaskStatus: OK
 TaskState: Running
 PercentComplete: 40
 TaskStatus: OK
 TaskState: Completed
 PercentComplete: 100
```

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```
 TaskStatus: OK
Firmware update successful!
 Overall Time Taken: 0:09:14
Refer to
```

Chapter 23. Motherboard Tray Sample Configuration

Alternatively, firmware update parameters can be provided via a YAML configuration file instead of the command line. The following example shows the basic structure for updating a single motherboard tray.

```
# Define target platform as DGX
TargetPlatform: 'DGX'

# Update the path to firmware update file
FWUpdateFilePath:
  - "nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg"

# Replace BMC_IP with BMC IP Address
# Replace RF_USERNAME with BMC Redfish Username Credential
# Replace RF_PASSWORD with BMC Redfish Password Credential
BMC_IP: "1.1.1.1"
RF_USERNAME: "username"
RF_PASSWORD: "password"

FwUpdateMethod: "MultipartHttpPushUri"

# Update Parameters set to update entire MB Tray
UpdateParametersTargets: {}

# Disable Sanitize Log, disabling Sanitize Log leads to print system IP and
↪user credential to the logs and screen
SANITIZE_LOG: False
```

To compare component versions, specify the configuration file with the `-c` flag or the `--config` option and the `show_version` command.

```
$ nvfwupd -c config.yaml show_version

System Model: DGXB200
Part number: 965-24387-0017-000
Serial number: 1662324000131
Packages: ['DGX_0005_250415.1.1']
Connection Status: Successful
```

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```
Firmware Devices:
AP Name                                 Sys Version                     Pkg
 ↪Version                    Up-To-Date
-------                                 -----------                     ------
 ↪-----                     ----------
CPLDMB_0                                0.2.1.9                         0.2.1.
 ↪9                         Yes
CPLDMID_0                               0.2.1.3                         0.2.1.
 ↪4                         No
CX7NIC_0                                28.43.2026                      32.43.
 ↪2024                      No
CX7NIC_1                                28.43.2026                      32.43.
 ↪2024                      No
CX7_0                                   28.43.2026                      N/A
 ↪                          No
CX7_1                                   28.43.2026                      N/A
 ↪                          No
CX7_2                                   28.43.2026                      N/A
 ↪                          No
CX7_3                                   28.43.2026                      N/A
 ↪                          No
CX7_4                                   28.43.2026                      N/A
 ↪                          No
CX7_5                                   28.43.2026                      N/A
 ↪                          No
CX7_6                                   28.43.2026                      N/A
 ↪                          No
CX7_7                                   28.43.2026                      N/A
 ↪                          No
EROT_BIOS_0                             00.04.0056.0000_n00             00.04.
 ↪0058.0000_n00             No
EROT_BMC_0                              00.04.0056.0000_n00             00.04.
 ↪0058.0000_n00             No
HGX_FW_BMC_0                            25.02-1-ga18                    N/A
 ↪                          No
HGX_FW_ERoT_BMC_0                       01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_FPGA_0                      01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVLinkManagementNIC_0       01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVSwitch_0                  01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVSwitch_1                  01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_FPGA_0                           1.85                            N/A
 ↪                          No
HGX_FW_GPU_SXM_1                        97.00.A3.00.00                  N/A
 ↪                          No
HGX_FW_GPU_SXM_2                        97.00.A3.00.00                  N/A
 ↪                          No
HGX_FW_GPU_SXM_3                        97.00.A3.00.00                  N/A
```

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```
 ↪                          No
HGX_FW_GPU_SXM_4                    97.00.A3.00.00                  N/A
 ↪                          No
HGX_FW_GPU_SXM_5                    97.00.A3.00.00                  N/A
 ↪                          No
HGX_FW_GPU_SXM_6                    97.00.A3.00.00                  N/A
 ↪                          No
HGX_FW_GPU_SXM_7                    97.00.A3.00.00                  N/A
 ↪                          No
HGX_FW_GPU_SXM_8                    97.00.A3.00.00                  N/A
 ↪                          No
HGX_FW_NVLinkManagementNIC_0        28.45.0350                      N/A
 ↪                          No
HGX_FW_NVSwitch_0                   35_2014_1680                    N/A
 ↪                          No
HGX_FW_NVSwitch_1                   35_2014_1680                    N/A
 ↪                          No
HGX_FW_PCIeRetimer_0                2.20.21                         N/A
 ↪                          No
HGX_FW_PCIeRetimer_1                2.20.21                         N/A
 ↪                          No
HGX_FW_PCIeRetimer_2                2.20.21                         N/A
 ↪                          No
HGX_FW_PCIeRetimer_3                2.20.21                         N/A
 ↪                          No
HGX_FW_PCIeRetimer_4                2.20.21                         N/A
 ↪                          No
HGX_FW_PCIeRetimer_5                2.20.21                         N/A
 ↪                          No
HGX_FW_PCIeRetimer_6                2.20.21                         N/A
 ↪                          No
HGX_FW_PCIeRetimer_7                2.20.21                         N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_1               G525.0200.00.02                 N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_2               G525.0200.00.02                 N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_3               G525.0200.00.02                 N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_4               G525.0200.00.02                 N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_5               G525.0200.00.02                 N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_6               G525.0200.00.02                 N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_7               G525.0200.00.02                 N/A
 ↪                          No
HGX_InfoROM_GPU_SXM_8               G525.0200.00.02                 N/A
 ↪                          No
HostBIOS_0                          01.06.03                        01.05.
↪05                         Yes
HostBMC_0                           25.02.12                        25.02.
```

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```
↪12                          Yes
PCIeRetimer_0                                2.07.19                          2.07.
↪19                           Yes
PCIeRetimer_1                                2.07.19                          2.07.
↪19                           Yes
PCIeSwitch_0                                 0.0.7                            0.0.7
↪                            Yes
PCIeSwitch_1                                 1.0.7                            1.0.7
↪                            Yes
PSU_0                                        0204.0201.0204                   0204.
↪0201.0204                    Yes
PSU_1                                        0204.0201.0204                   0204.
↪0201.0204                    Yes
PSU_2                                        0204.0201.0204                   0204.
↪0201.0204                    Yes
PSU_3                                        0204.0201.0204                   0204.
↪0201.0204                    Yes
PSU_4                                        0204.0201.0204                   0204.
↪0201.0204                    Yes
PSU_5                                        0204.0201.0204                   0204.
↪0201.0204                    Yes
--------------------------------------------------------------------------------
↪----------------------------------------
Error Code: 0
```

To update the motherboard tray, specify the configuration file with the `-c` flag or the `--config` option and the `update_fw` command.

```
$ nvfwupd -c config.yaml update_fw

Updating ip address: ip=1.1.1.1
FW package: ['nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg']
Ok to proceed with firmware update? <Y/N>
y
{"@odata.type": "#UpdateService.v1_11_0.UpdateService", "Messages": [{"@odata.
↪type": "#Message.v1_0_8.Message", "Message": "A new task /redfish/v1/
↪TaskService/Tasks/6 was created.", "MessageArgs": ["/redfish/v1/TaskService/
↪Tasks/6"], "MessageId": "Task.1.0.New", "Resolution": "None", "Severity":
↪"OK"}, {"@odata.type": "#Message.v1_0_8.Message", "Message": "The action
↪UpdateService.MultipartPush was submitted to do firmware update.",
↪"MessageArgs": ["UpdateService.MultipartPush"], "MessageId": "UpdateService.
↪1.0.StartFirmwareUpdate", "Resolution": "None", "Severity": "OK"}]}
FW update started, Task Id: 6
Wait for Firmware Update to Start...
    TaskState: Running
    PercentComplete: 45
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 47
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 51
```

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```
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 52
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 53
    TaskStatus: OK
    TaskState: Running
    ...
    TaskState: Running
    PercentComplete: 93
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 94
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 95
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 96
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 97
    TaskStatus: OK
    TaskState: Running
    PercentComplete: 98
    TaskStatus: OK
    TaskState: Completed
    PercentComplete: 100
    TaskStatus: OK
    Firmware update successful!
Overall Time Taken: 0:31:33
Update successful. Perform activation steps for the new firmware to take
 ↪effect.
--------------------------------------------------------------------------------
 ↪----------------------------------------
Error Code: 0
```

Chapter 24. GPU Tray Sample Configuration

Alternatively, firmware update parameters can be provided via a YAML configuration file instead of the command line. The following example shows the basic structure for updating a single GPU tray.

```
# Define target platform as DGX
TargetPlatform: 'DGX'

# Update the path to firmware update file
FWUpdateFilePath:
  - "nvfw_DGX-HGX-B100-B200x8_250302.1.3.fwpkg"

# Replace BMC_IP with BMC IP Address
# Replace RF_USERNAME with BMC Redfish Username Credential
# Replace RF_PASSWORD with BMC Redfish Password Credential
BMC_IP: "1.1.1.1"
RF_USERNAME: "username"
RF_PASSWORD: "password"

FwUpdateMethod: "MultipartHttpPushUri"

# Update Parameters to update entire GPU Tray
UpdateParametersTargets:
   - "/redfish/v1/UpdateService/FirmwareInventory/HGX_0"

# Disable Sanitize Log, disabling Sanitize Log leads to print system IP and
↪user credential to the logs and screen
SANITIZE_LOG: False
```

To compare component versions, specify the configuration file with the `-c` flag or the `--config` option and the `show_version` command.

```
$ nvfwupd -c config.yaml show_version

System Model: DGXB200
Part number: 965-24387-0017-000
Serial number: 1662324000131
Packages: ['HGX-B100-B200x8_250302.1.3']
Connection Status: Successful
```

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```
Firmware Devices:
AP Name                                  Sys Version                    Pkg
 ↪Version                    Up-To-Date
-------                                  -----------                    ------
 ↪-----                     ----------
CPLDMB_0                                 0.2.1.9                        N/A
 ↪                          No
CPLDMID_0                                0.2.1.3                        N/A
 ↪                          No
CX7NIC_0                                 28.43.2026                     N/A
 ↪                          No
CX7NIC_1                                 28.43.2026                     N/A
 ↪                          No
CX7_0                                    28.43.2026                     N/A
 ↪                          No
CX7_1                                    28.43.2026                     N/A
 ↪                          No
CX7_2                                    28.43.2026                     N/A
 ↪                          No
CX7_3                                    28.43.2026                     N/A
 ↪                          No
CX7_4                                    28.43.2026                     N/A
 ↪                          No
CX7_5                                    28.43.2026                     N/A
 ↪                          No
CX7_6                                    28.43.2026                     N/A
 ↪                          No
CX7_7                                    28.43.2026                     N/A
 ↪                          No
EROT_BIOS_0                              00.04.0056.0000_n00            N/A
 ↪                          No
EROT_BMC_0                               00.04.0056.0000_n00            N/A
 ↪                          No
HGX_FW_BMC_0                             25.02-1-ga17                   25.02-
 ↪1-ga18                    No
HGX_FW_ERoT_BMC_0                        01.04.0017.0000_n04            01.04.
 ↪0018.0000_n04             No
HGX_FW_ERoT_FPGA_0                       01.04.0017.0000_n04            01.04.
 ↪0018.0000_n04             No
HGX_FW_ERoT_NVLinkManagementNIC_0        01.04.0017.0000_n04            01.04.
 ↪0018.0000_n04             No
HGX_FW_ERoT_NVSwitch_0                   01.04.0017.0000_n04            01.04.
 ↪0018.0000_n04             No
HGX_FW_ERoT_NVSwitch_1                   01.04.0017.0000_n04            01.04.
 ↪0018.0000_n04             No
HGX_FW_FPGA_0                            1.82                           1.85
 ↪                          No
HGX_FW_GPU_SXM_1                         97.00.A2.00.00                 97.00.
 ↪A3.00.00                  No
HGX_FW_GPU_SXM_2                         97.00.A2.00.00                 97.00.
 ↪A3.00.00                  No
HGX_FW_GPU_SXM_3                         97.00.A2.00.00                 97.00.
```

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```
↪A3.00.00                  No
HGX_FW_GPU_SXM_4                    97.00.A2.00.00                97.00.
↪A3.00.00                  No
HGX_FW_GPU_SXM_5                    97.00.A2.00.00                97.00.
↪A3.00.00                  No
HGX_FW_GPU_SXM_6                    97.00.A2.00.00                97.00.
↪A3.00.00                  No
HGX_FW_GPU_SXM_7                    97.00.A2.00.00                97.00.
↪A3.00.00                  No
HGX_FW_GPU_SXM_8                    97.00.A2.00.00                97.00.
↪A3.00.00                  No
HGX_FW_NVLinkManagementNIC_0        28.45.0348                    28.45.
↪0350                      No
HGX_FW_NVSwitch_0                   35_2014_1680                  35_
↪2014_1680                    No
HGX_FW_NVSwitch_1                   35_2014_1680                  35_
↪2014_1680                    No
HGX_FW_PCIeRetimer_0                2.20.20                       2.20.
↪21                        No
HGX_FW_PCIeRetimer_1                2.20.20                       2.20.
↪21                        No
HGX_FW_PCIeRetimer_2                2.20.20                       2.20.
↪21                        No
HGX_FW_PCIeRetimer_3                2.20.20                       2.20.
↪21                        No
HGX_FW_PCIeRetimer_4                2.20.20                       2.20.
↪21                        No
HGX_FW_PCIeRetimer_5                2.20.20                       2.20.
↪21                        No
HGX_FW_PCIeRetimer_6                2.20.20                       2.20.
↪21                        No
HGX_FW_PCIeRetimer_7                2.20.20                       2.20.
↪21                        No
HGX_InfoROM_GPU_SXM_1               G525.0200.00.02               N/A
↪                          No
HGX_InfoROM_GPU_SXM_2               G525.0200.00.02               N/A
↪                          No
HGX_InfoROM_GPU_SXM_3               G525.0200.00.02               N/A
↪                          No
HGX_InfoROM_GPU_SXM_4               G525.0200.00.02               N/A
↪                          No
HGX_InfoROM_GPU_SXM_5               G525.0200.00.02               N/A
↪                          No
HGX_InfoROM_GPU_SXM_6               G525.0200.00.02               N/A
↪                          No
HGX_InfoROM_GPU_SXM_7               G525.0200.00.02               N/A
↪                          No
HGX_InfoROM_GPU_SXM_8               G525.0200.00.02               N/A
↪                          No
HostBIOS_0                          01.06.03                      N/A
↪                          No
HostBMC_0                           25.02.12                      N/A
```

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```
 ↪                          No
PCIeRetimer_0                          2.07.19                          N/A
 ↪                          No
PCIeRetimer_1                          2.07.19                          N/A
 ↪                          No
PCIeSwitch_0                           0.0.7                            N/A
 ↪                          No
PCIeSwitch_1                           1.0.7                            N/A
 ↪                          No
PSU_0                                  0204.0201.0204                   N/A
 ↪                          No
PSU_1                                  0204.0201.0204                   N/A
 ↪                          No
PSU_2                                  0204.0201.0204                   N/A
 ↪                          No
PSU_3                                  0204.0201.0204                   N/A
 ↪                          No
PSU_4                                  0204.0201.0204                   N/A
 ↪                          No
PSU_5                                  0204.0201.0204                   N/A
 ↪                          No
--------------------------------------------------------------------------------
 ↪----------------------------------------
Error Code: 0
```

To update the GPU tray, specify the configuration file with the `-c` flag or the `--config` option and the `update_fw` command.

```
$ nvfwupd -c config.yaml update_fw

Updating ip address: ip=1.1.1.1
FW package: ['nvfw_DGX-HGX-B100-B200x8_250302.1.3.fwpkg']
Ok to proceed with firmware update? <Y/N>
y
{"@odata.type": "#UpdateService.v1_11_0.UpdateService", "Messages": [{"@odata.
 ↪type": "#Message.v1_0_8.Message", "Message": "A new task /redfish/v1/
 ↪TaskService/Tasks/10 was created.", "MessageArgs": ["/redfish/v1/
 ↪TaskService/Tasks/10"], "MessageId": "Task.1.0.New", "Resolution": "None",
 ↪"Severity": "OK"}, {"@odata.type": "#Message.v1_0_8.Message", "Message":
 ↪"The action UpdateService.MultipartPush was submitted to do firmware update.
 ↪", "MessageArgs": ["UpdateService.MultipartPush"], "MessageId":
 ↪"UpdateService.1.0.StartFirmwareUpdate", "Resolution": "None", "Severity":
 ↪"OK"}]}
FW update started, Task Id: 10
Wait for Firmware Update to Start...
TaskState: Running
PercentComplete: 20
TaskStatus: OK
TaskState: Running
PercentComplete: 40
TaskStatus: OK
TaskState: Completed
```

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```
PercentComplete: 100
TaskStatus: OK
Firmware update successful!
Overall Time Taken: 0:10:15
Update successful. Perform activation steps for new firmware to take effect.
--------------------------------------------------------------------------------
↪----------------------------------------
Error Code: 0
```

Chapter 25. Multiple System Firmware Updates

The `nvfwupd` tool enables sequential updates of multiple systems using the same firmware package via a YAML configuration file. This requires defining the update file and a list of target systems, including their respective credentials.

> **Note**
>
> Deprecated feature: Starting with `nvfwupd` version 2.0.5, specifying the `targets` sub-option with a JSON file of multiple targets for multiple system updates is no longer supported. Multiple targets can be updated sequentially by using the `config.yaml` file, described in this section.

25.1. Multiple System Sample Configuration

The following example shows a configuration YAML file for sequential updates:

```
# Set TargetPlatform to DGX
TargetPlatform: 'DGX'

# Disable Sanitize Log optionally
# Disabling SANITIZE_LOG prints system IPs and user credentials to the logs and
 ↪screen
SANITIZE_LOG: False

# Provide the full path of the firmware file to be used for firmware update
FWUpdateFilePath:
  - "nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg"

# Set FwUpdateMethod to MultipartHttpPushUri
FwUpdateMethod: "MultipartHttpPushUri"

# List of update targets. replaces -s/--special option input file. Value is
 ↪list of target URIs
# Use UpdateParametersTargets: {} for DGX empty JSON value used for full DGX
 ↪update
UpdateParametersTargets: {}
```

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```
# If updating entire GPU Trays, uncomment the following UpdateParametersTargets
 ↪and comment out the above "UpdateParametersTargets: {}"
#UpdateParametersTargets:
#   - "/redfish/v1/UpdateService/FirmwareInventory/HGX_0"

# Multi target input. Value is list of dicts.
# Update BMC_IP, RF_USERNAME, and RF_PASSWORD credentials for each system
Targets:
- BMC_IP: "1.1.1.1"
  RF_USERNAME: "user"
  RF_PASSWORD: "password"
- BMC_IP: "2.2.2.2"
  RF_USERNAME: "username2"
  RF_PASSWORD: "my_secondary_password"
```

25.2. Running nvfwupd Using the Configuration File

To display the version information for each target system component sequentially alongside the corresponding firmware update file component version information, specify the configuration file with the `-c` flag or the `--config` option and the `show_version` command.

```
$ nvfwupd -c config.yaml show_version

System Model: DGXB200
Part number: 965-24387-0017-000
Serial number: 1662224610084
Packages: ['DGX_0005_250415.1.1']
Connection Status: Successful

Firmware Devices:
AP Name                                 Sys Version                     Pkg
 ↪Version                    Up-To-Date
-------                                 -----------                     ------
 ↪-----                    ----------
CPLDMB_0                                0.2.1.8                         0.2.1.
 ↪9                        No
CPLDMID_0                               0.2.1.1                         0.2.1.
 ↪4                        No
CX7NIC_0                                28.42.1000                      32.43.
 ↪2024                     No
CX7NIC_1                                28.42.1000                      32.43.
 ↪2024                     No
CX7_0                                   28.42.1000                      N/A
 ↪                         No
CX7_1                                   28.42.1000                      N/A
 ↪                         No
CX7_2                                   28.42.1000                      N/A
 ↪                         No
```

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```
CX7_3                                   28.42.1000                      N/A
 ↪                          No
CX7_4                                   28.42.1000                      N/A
 ↪                          No
CX7_5                                   28.42.1000                      N/A
 ↪                          No
CX7_6                                   28.42.1000                      N/A
 ↪                          No
CX7_7                                   28.42.1000                      N/A
 ↪                          No
EROT_BIOS_0                             00.04.0052.0000_n00             00.04.
 ↪0058.0000_n00             No
EROT_BMC_0                              00.04.0052.0000_n00             00.04.
 ↪0058.0000_n00             No
HGX_FW_BMC_0                            25.02-1-ga18                    N/A
 ↪                          No
HGX_FW_ERoT_BMC_0                       01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_FPGA_0                      01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVLinkManagementNIC_0       01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVSwitch_0                  01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVSwitch_1                  01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_FPGA_0                           1.85                            N/A
 ↪                          No
HGX_FW_GPU_SXM_1                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_2                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_3                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_4                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_5                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_6                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_7                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_8                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_NVLinkManagementNIC_0            28.45.0350                      N/A
 ↪                          No
HGX_FW_NVSwitch_0                       35_2014_1680                    N/A
 ↪                          No
HGX_FW_NVSwitch_1                       35_2014_1680                    N/A
 ↪                          No
HGX_FW_PCIeRetimer_0                    2.20.21                         N/A
 ↪                          No
```

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```
HGX_FW_PCIeRetimer_1                    2.20.21                 N/A
↪                       No
HGX_FW_PCIeRetimer_2                    2.20.21                 N/A
↪                       No
HGX_FW_PCIeRetimer_3                    2.20.21                 N/A
↪                       No
HGX_FW_PCIeRetimer_4                    2.20.21                 N/A
↪                       No
HGX_FW_PCIeRetimer_5                    2.20.21                 N/A
↪                       No
HGX_FW_PCIeRetimer_6                    2.20.21                 N/A
↪                       No
HGX_FW_PCIeRetimer_7                    2.20.21                 N/A
↪                       No
HGX_InfoROM_GPU_SXM_1                   G525.0230.00.02         N/A
↪                       No
HGX_InfoROM_GPU_SXM_2                   G525.0230.00.02         N/A
↪                       No
HGX_InfoROM_GPU_SXM_3                   G525.0230.00.02         N/A
↪                       No
HGX_InfoROM_GPU_SXM_4                   G525.0230.00.02         N/A
↪                       No
HGX_InfoROM_GPU_SXM_5                   G525.0230.00.02         N/A
↪                       No
HGX_InfoROM_GPU_SXM_6                   G525.0230.00.02         N/A
↪                       No
HGX_InfoROM_GPU_SXM_7                   G525.0230.00.02         N/A
↪                       No
HGX_InfoROM_GPU_SXM_8                   G525.0230.00.02         N/A
↪                       No
HostBIOS_0                              01.05.03                01.05.
↪05                     No
HostBMC_0                               25.02.12                25.02.
↪12                     Yes
PCIeRetimer_0                           2.07.19                 2.07.
↪19                      Yes
PCIeRetimer_1                           2.07.19                 2.07.
↪19                      Yes
PCIeSwitch_0                            0.0.7                   0.0.7
↪                       Yes
PCIeSwitch_1                            1.0.7                   1.0.7
↪                       Yes
PSU_0                                   0204.0201.0204          0204.
↪0201.0204               Yes
PSU_1                                   0204.0201.0204          0204.
↪0201.0204               Yes
PSU_2                                   0204.0201.0204          0204.
↪0201.0204               Yes
PSU_3                                   0204.0201.0204          0204.
↪0201.0204               Yes
PSU_4                                   0204.0201.0204          0204.
↪0201.0204               Yes
```

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```
PSU_5                                    0204.0201.0204                  0204.
↪0201.0204                  Yes
--------------------------------------------------------------------------------
↪----------------------------------------
System Model: DGXB200
Part number: 965-24387-0017-000
Serial number: 1234567890123
Packages: ['DGX_0005_250415.1.1']
Connection Status: Successful

Firmware Devices:
AP Name                                  Sys Version                     Pkg
↪Version                    Up-To-Date
-------                                  -----------                     ------
↪-----                    ----------
CPLDMB_0                                 0.2.1.9                         0.2.1.
↪9                        Yes
CPLDMID_0                                0.2.1.3                         0.2.1.
↪4                        No
EROT_BIOS_0                              00.04.0058.0000_n00             00.04.
↪0058.0000_n00            Yes
EROT_BMC_0                               00.04.0058.0000_n00             00.04.
↪0058.0000_n00            Yes
HostBIOS_0                               01.06.07                        01.05.
↪05                       Yes
HostBMC_0                                25.04.22                        25.02.
↪12                       Yes
PCIeRetimer_0                            2.07.19                         2.07.
↪19                        Yes
PCIeRetimer_1                            2.07.19                         2.07.
↪19                        Yes
PCIeSwitch_0                             0.0.7                           0.0.7
↪                         Yes
PCIeSwitch_1                             1.0.7                           1.0.7
↪                         Yes
PSU_0                                    0204.0201.0204                  0204.
↪0201.0204                 Yes
PSU_1                                    0204.0201.0204                  0204.
↪0201.0204                 Yes
PSU_2                                    0204.0201.0204                  0204.
↪0201.0204                 Yes
PSU_3                                    0204.0201.0204                  0204.
↪0201.0204                 Yes
PSU_4                                    0204.0201.0204                  0204.
↪0201.0204                 Yes
PSU_5                                    0204.0201.0204                  0204.
↪0201.0204                 Yes
--------------------------------------------------------------------------------
↪----------------------------------------
Error Code: 0
```

To update each target system sequentially, specify the configuration file with the `-c` flag or the `--config` option and the `update_fw` command.

```
$ nvfwupd -c config.yaml update_fw -y

Updating ip address: ip=1.1.1.1
FW package: ['nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg']
{"@odata.type": "#UpdateService.v1_11_0.UpdateService", "Messages": [{"@odata.
↪type": "#Message.v1_0_8.Message", "Message": "A new task /redfish/v1/
↪TaskService/Tasks/7 was created.", "MessageArgs": ["/redfish/v1/TaskService/
↪Tasks/7"], "MessageId": "Task.1.0.New", "Resolution": "None", "Severity":
↪"OK"}, {"@odata.type": "#Message.v1_0_8.Message", "Message": "The action
↪UpdateService.MultipartPush was submitted to do firmware update.",
↪"MessageArgs": ["UpdateService.MultipartPush"], "MessageId": "UpdateService.
↪1.0.StartFirmwareUpdate", "Resolution": "None", "Severity": "OK"}]}
  FW update started, Task Id: 7
Wait for Firmware Update to Start...
  TaskState: Running
  PercentComplete: 43
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 47
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 51
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 52
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 53
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 54
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 55
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 56
  TaskStatus: OK
  ...
  TaskState: Running
  PercentComplete: 96
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 97
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 98
  TaskStatus: OK
  TaskState: Completed
  PercentComplete: 100
  TaskStatus: OK
  Firmware update successful!
Overall Time Taken: 0:31:31
```

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```
Update successful. Perform activation steps for the new firmware to take
 ↪effect.
--------------------------------------------------------------------------------
 ↪----------------------------------------
Updating ip address: ip=2.2.2.2
FW package: ['nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg']
{"@odata.type": "#UpdateService.v1_11_0.UpdateService", "Messages": [{"@odata.
 ↪type": "#Message.v1_0_8.Message", "Message": "A new task /redfish/v1/
 ↪TaskService/Tasks/1 was created.", "MessageArgs": ["/redfish/v1/TaskService/
 ↪Tasks/1"], "MessageId": "Task.1.0.New", "Resolution": "None", "Severity":
 ↪"OK"}, {"@odata.type": "#Message.v1_0_8.Message", "Message": "The action
 ↪UpdateService.MultipartPush was submitted to do firmware update.",
 ↪"MessageArgs": ["UpdateService.MultipartPush"], "MessageId": "UpdateService.
 ↪1.0.StartFirmwareUpdate", "Resolution": "None", "Severity": "OK"}]}
  FW update started, Task Id: 1
Wait for Firmware Update to Start...
  TaskState: Running
  PercentComplete: 45
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 47
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 51
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 52
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 53
  TaskStatus: OK
  TaskState: Running
  ...
  TaskState: Running
  PercentComplete: 93
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 94
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 95
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 96
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 97
  TaskStatus: OK
  TaskState: Running
  PercentComplete: 98
  TaskStatus: OK
  TaskState: Completed
```

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```
  PercentComplete: 100
  TaskStatus: OK
  Firmware update successful!
Overall Time Taken: 0:31:33
Update successful. Perform activation steps for new firmware to take effect.
--------------------------------------------------------------------------------
↪----------------------------------------
Error Code: 0
```

After the update, you must perform an AC cycle on each system for the changes to take effect.

Chapter 26. Parallel System Firmware Update

Starting with `nvfwupd` version 2.0.5, several systems can be updated simultaneously in parallel.

26.1. Sample Configuration for Parallel System Update

The `nvfwupd` tool enables parallel update of multiple systems using either the same or different packages via the configuration YAML file.

This requires defining the update `PACKAGE`, `TARGET_PLATFORM` (as `DGX`), `UPDATE_PARAMETERS_TARGETS`, and system credentials for each system. You can optionally add a user-defined `SYSTEM_NAME` string to each target system to identify it in update outputs

`UPDATE_PARAMETERS_TARGETS` requires the same parameters as the `-s` special update file for selecting update targets from the `nvfwupd` command line.

For reference, set `UPDATE_PARAMETERS_TARGETS` for each of the following:

- `{}`: for updating the entire motherboard tray
- `{"Targets": ["/redfish/v1/UpdateService/FirmwareInventory/HGX_0"]}`: for updating the entire GPU tray
- `{"Targets": ["/redfish/v1/UpdateService/FirmwareInventory/HostBMC_0"]}`: for updating only the host BMC

  Adjust `HostBMC_0` to a single update target as desired.

The following example shows a configuration file:

```
# Disable Sanitize Log optionally
# Disabling SANITIZE_LOG prints system IPs and user credentials to the logs and
↪screen
SANITIZE_LOG: False

# Set ParallelUpdate to True
ParallelUpdate: True

# Multi target input. Value is list of dicts.
# Update BMC_IP, RF_USERNAME, and RF_PASSWORD credentials for each system
```

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```
# Set TARGET_PLATFORM for each system to DGX
# Set PACKAGE to desired update file path for each system
# UPDATE_PARAMETERS_TARGETS set to desired update targets
Targets:
- BMC_IP: "1.1.1.1"
  RF_USERNAME: "user"
  RF_PASSWORD: "password"
  TARGET_PLATFORM: "DGX"
  PACKAGE: "nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg"
  UPDATE_PARAMETERS_TARGETS: {}
  SYSTEM_NAME: "DGX_SYSTEM_LAB_1"
- BMC_IP: "2.2.2.2"
  RF_USERNAME: "username2"
  RF_PASSWORD: "my_secondary_password"
  TARGET_PLATFORM: "DGX"
  PACKAGE: "nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg"
  UPDATE_PARAMETERS_TARGETS: {}
  SYSTEM_NAME: "EXTERNAL_DGX_SYSTEM"
```

26.2. Running nvfwupd Using the Configuration File

You can display the component version information for each target system in parallel with the firmware update file component version information by specifying the configuration file with the `-c` flag or the `--config` option and the `show_version` command. Because a `SYSTEM_NAME` was added for each system in the configuration file, the output will also indicate which system information is displayed.

```
$ nvfwupd -c config.yaml show_version

Displaying version info for DGX_SYSTEM_LAB_1
System Model: DGXB200
Part number: 965-24387-0017-000
Serial number: 1662224610084
Packages: ['DGX_0005_250415.1.1']
Connection Status: Successful

Firmware Devices:
AP Name                                  Sys Version                    Pkg
 ↪Version                    Up-To-Date
-------                                  -----------                    ------
 ↪-----                    ----------
CPLDMB_0                                 0.2.1.8                        0.2.1.
 ↪9                        No
CPLDMID_0                                0.2.1.1                        0.2.1.
 ↪4                        No
CX7NIC_0                                 28.42.1000                     32.43.
 ↪2024                     No
CX7NIC_1                                 28.42.1000                     32.43.
 ↪2024                     No
```

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```
CX7_0                                   28.42.1000                      N/A
 ↪                          No
CX7_1                                   28.42.1000                      N/A
 ↪                          No
CX7_2                                   28.42.1000                      N/A
 ↪                          No
CX7_3                                   28.42.1000                      N/A
 ↪                          No
CX7_4                                   28.42.1000                      N/A
 ↪                          No
CX7_5                                   28.42.1000                      N/A
 ↪                          No
CX7_6                                   28.42.1000                      N/A
 ↪                          No
CX7_7                                   28.42.1000                      N/A
 ↪                          No
EROT_BIOS_0                             00.04.0052.0000_n00             00.04.
 ↪0058.0000_n00             No
EROT_BMC_0                              00.04.0052.0000_n00             00.04.
 ↪0058.0000_n00             No
HGX_FW_BMC_0                            25.02-1-ga18                    N/A
 ↪                          No
HGX_FW_ERoT_BMC_0                       01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_FPGA_0                      01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVLinkManagementNIC_0       01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVSwitch_0                  01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_ERoT_NVSwitch_1                  01.04.0018.0000_n04             N/A
 ↪                          No
HGX_FW_FPGA_0                           1.85                            N/A
 ↪                          No
HGX_FW_GPU_SXM_1                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_2                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_3                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_4                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_5                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_6                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_7                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_GPU_SXM_8                        97.00.9A.00.14                  N/A
 ↪                          No
HGX_FW_NVLinkManagementNIC_0            28.45.0350                      N/A
 ↪                          No
```

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```
HGX_FW_NVSwitch_0                       35_2014_1680                  N/A
↪                    No
HGX_FW_NVSwitch_1                       35_2014_1680                  N/A
↪                    No
HGX_FW_PCIeRetimer_0                    2.20.21                       N/A
↪                    No
HGX_FW_PCIeRetimer_1                    2.20.21                       N/A
↪                    No
HGX_FW_PCIeRetimer_2                    2.20.21                       N/A
↪                    No
HGX_FW_PCIeRetimer_3                    2.20.21                       N/A
↪                    No
HGX_FW_PCIeRetimer_4                    2.20.21                       N/A
↪                    No
HGX_FW_PCIeRetimer_5                    2.20.21                       N/A
↪                    No
HGX_FW_PCIeRetimer_6                    2.20.21                       N/A
↪                    No
HGX_FW_PCIeRetimer_7                    2.20.21                       N/A
↪                    No
HGX_InfoROM_GPU_SXM_1                   G525.0230.00.02               N/A
↪                    No
HGX_InfoROM_GPU_SXM_2                   G525.0230.00.02               N/A
↪                    No
HGX_InfoROM_GPU_SXM_3                   G525.0230.00.02               N/A
↪                    No
HGX_InfoROM_GPU_SXM_4                   G525.0230.00.02               N/A
↪                    No
HGX_InfoROM_GPU_SXM_5                   G525.0230.00.02               N/A
↪                    No
HGX_InfoROM_GPU_SXM_6                   G525.0230.00.02               N/A
↪                    No
HGX_InfoROM_GPU_SXM_7                   G525.0230.00.02               N/A
↪                    No
HGX_InfoROM_GPU_SXM_8                   G525.0230.00.02               N/A
↪                    No
HostBIOS_0                              01.05.03                      01.05.
↪05                  No
HostBMC_0                               25.02.12                      25.02.
↪12                  Yes
PCIeRetimer_0                           2.07.19                       2.07.
↪19                   Yes
PCIeRetimer_1                           2.07.19                       2.07.
↪19                   Yes
PCIeSwitch_0                            0.0.7                         0.0.7
↪                    Yes
PCIeSwitch_1                            1.0.7                         1.0.7
↪                    Yes
PSU_0                                   0204.0201.0204                0204.
↪0201.0204            Yes
PSU_1                                   0204.0201.0204                0204.
↪0201.0204            Yes
```

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```
PSU_2                                    0204.0201.0204                  0204.
↪0201.0204                  Yes
PSU_3                                    0204.0201.0204                  0204.
↪0201.0204                  Yes
PSU_4                                    0204.0201.0204                  0204.
↪0201.0204                  Yes
PSU_5                                    0204.0201.0204                  0204.
↪0201.0204                  Yes
--------------------------------------------------------------------------------
↪----------------------------------------
Displaying version info for EXTERNAL_DGX_SYSTEM
System Model: DGXB200
Part number: 965-24387-0017-000
Serial number: 1234567890123
Packages: ['DGX_0005_250415.1.1']
Connection Status: Successful

Firmware Devices:
AP Name                                  Sys Version                     Pkg
↪Version                     Up-To-Date
-------                                  -----------                     ------
↪-----                     ----------
CPLDMB_0                                 0.2.1.9                         0.2.1.
↪9                         Yes
CPLDMID_0                                0.2.1.3                         0.2.1.
↪4                         No
CX7NIC_0                                 32.43.2024                      32.43.
↪2024                      Yes
CX7NIC_1                                 32.43.2024                      32.43.
↪2024                      Yes
CX7_0                                    28.43.2026                      N/A
↪                          No
CX7_1                                    28.43.2026                      N/A
↪                          No
CX7_2                                    28.43.2026                      N/A
↪                          No
CX7_3                                    28.43.2026                      N/A
↪                          No
CX7_4                                    28.43.2026                      N/A
↪                          No
CX7_5                                    28.43.2026                      N/A
↪                          No
CX7_6                                    28.43.2026                      N/A
↪                          No
CX7_7                                    28.43.2026                      N/A
↪                          No
EROT_BIOS_0                              00.04.0058.0000_n00             00.04.
↪0058.0000_n00             Yes
EROT_BMC_0                               00.04.0058.0000_n00             00.04.
↪0058.0000_n00             Yes
HGX_FW_BMC_0                             25.02-1-ga19                    N/A
↪                          No
```

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```
HGX_FW_ERoT_BMC_0                       01.04.0018.0000_n04             N/A
↪                       No
HGX_FW_ERoT_FPGA_0                      01.04.0018.0000_n04             N/A
↪                       No
HGX_FW_ERoT_NVLinkManagementNIC_0       01.04.0018.0000_n04             N/A
↪                       No
HGX_FW_ERoT_NVSwitch_0                  01.04.0018.0000_n04             N/A
↪                       No
HGX_FW_ERoT_NVSwitch_1                  01.04.0018.0000_n04             N/A
↪                       No
HGX_FW_FPGA_0                           1.87                            N/A
↪                       No
HGX_FW_GPU_SXM_1                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_GPU_SXM_2                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_GPU_SXM_3                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_GPU_SXM_4                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_GPU_SXM_5                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_GPU_SXM_6                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_GPU_SXM_7                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_GPU_SXM_8                        97.00.9A.00.0F                  N/A
↪                       No
HGX_FW_NVLinkManagementNIC_0            28.42.1282                      N/A
↪                       No
HGX_FW_NVSwitch_0                       35_2014_1680                    N/A
↪                       No
HGX_FW_NVSwitch_1                       35_2014_1680                    N/A
↪                       No
HGX_FW_PCIeRetimer_0                    2.20.20                         N/A
↪                       No
HGX_FW_PCIeRetimer_1                    2.20.20                         N/A
↪                       No
HGX_FW_PCIeRetimer_2                    2.20.20                         N/A
↪                       No
HGX_FW_PCIeRetimer_3                    2.20.20                         N/A
↪                       No
HGX_FW_PCIeRetimer_4                    2.20.20                         N/A
↪                       No
HGX_FW_PCIeRetimer_5                    2.20.20                         N/A
↪                       No
HGX_FW_PCIeRetimer_6                    2.20.20                         N/A
↪                       No
HGX_FW_PCIeRetimer_7                    2.20.20                         N/A
↪                       No
HGX_InfoROM_GPU_SXM_1                   G525.0220.00.03                 N/A
↪                       No
```

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```
HGX_InfoROM_GPU_SXM_2                     G525.0220.00.03                  N/A
 ↪                        No
HGX_InfoROM_GPU_SXM_3                     G525.0220.00.03                  N/A
 ↪                        No
HGX_InfoROM_GPU_SXM_4                     G525.0220.00.03                  N/A
 ↪                        No
HGX_InfoROM_GPU_SXM_5                     G525.0220.00.03                  N/A
 ↪                        No
HGX_InfoROM_GPU_SXM_6                     G525.0220.00.03                  N/A
 ↪                        No
HGX_InfoROM_GPU_SXM_7                     G525.0220.00.03                  N/A
 ↪                        No
HGX_InfoROM_GPU_SXM_8                     G525.0220.00.03                  N/A
 ↪                        No
HostBIOS_0                                01.06.07                         01.05.
 ↪05                      Yes
HostBMC_0                                 25.04.22                         25.02.
 ↪12                      Yes
PCIeRetimer_0                             2.07.19                          2.07.
 ↪19                       Yes
PCIeRetimer_1                             2.07.19                          2.07.
 ↪19                       Yes
PCIeSwitch_0                              0.0.7                            0.0.7
 ↪                        Yes
PCIeSwitch_1                              1.0.7                            1.0.7
 ↪                        Yes
PSU_0                                     0204.0201.0204                   0204.
 ↪0201.0204                Yes
PSU_1                                     0204.0201.0204                   0204.
 ↪0201.0204                Yes
PSU_2                                     0204.0201.0204                   0204.
 ↪0201.0204                Yes
PSU_3                                     0204.0201.0204                   0204.
 ↪0201.0204                Yes
PSU_4                                     0204.0201.0204                   0204.
 ↪0201.0204                Yes
PSU_5                                     0204.0201.0204                   0204.
 ↪0201.0204                Yes
--------------------------------------------------------------------------------
 ↪----------------------------------------
Error Code: 0
```

You can update several target systems in parallel by specifying the configuration file with the `-c` flag or `--config` option and the `update_fw` command. Because a `SYSTEM_NAME` was added for each system in the configuration file, the output will also indicate which system information is displayed.

```
$ nvfwupd -c config.yaml update_fw

Updating ip address: ip=1.1.1.1
Updating ip address: ip=2.2.2.2
FW package: ['nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg']
FW package: ['nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg']
```

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```
{"@odata.type": "#UpdateService.v1_11_0.UpdateService", "Messages": [{"@odata.
↪type": "#Message.v1_0_8.Message", "Message": "A new task /redfish/v1/
↪TaskService/Tasks/2 was created.", "MessageArgs": ["/redfish/v1/TaskService/
↪Tasks/2"], "MessageId": "Task.1.0.New", "Resolution": "None", "Severity":
↪"OK"}, {"@odata.type": "#Message.v1_0_8.Message", "Message": "The action
↪UpdateService.MultipartPush was submitted to do firmware update.",
↪"MessageArgs": ["UpdateService.MultipartPush"], "MessageId": "UpdateService.
↪1.0.StartFirmwareUpdate", "Resolution": "None", "Severity": "OK"}]}
FW update started, Task Id: 2
--------------------------------------------------------------------------------
↪----------------------------------------
{"@odata.type": "#UpdateService.v1_11_0.UpdateService", "Messages": [{"@odata.
↪type": "#Message.v1_0_8.Message", "Message": "A new task /redfish/v1/
↪TaskService/Tasks/8 was created.", "MessageArgs": ["/redfish/v1/TaskService/
↪Tasks/8"], "MessageId": "Task.1.0.New", "Resolution": "None", "Severity":
↪"OK"}, {"@odata.type": "#Message.v1_0_8.Message", "Message": "The action
↪UpdateService.MultipartPush was submitted to do firmware update.",
↪"MessageArgs": ["UpdateService.MultipartPush"], "MessageId": "UpdateService.
↪1.0.StartFirmwareUpdate", "Resolution": "None", "Severity": "OK"}]}
FW update started, Task Id: 8
--------------------------------------------------------------------------------
↪----------------------------------------
Printing Task status for IP: 1.1.1.1
Printing Task status for system: DGX_SYSTEM_LAB_1
--------------------------------------------------------------------------------
↪----------------------------------------
Task Info for Id: 8
StartTime: 2025-04-25T00:07:01+00:00
TaskState: Running
PercentComplete: 0
TaskStatus: OK
EndTime: 2025-04-25T00:06:58+00:00
Overall Task Status: {
    "@odata.context": "/redfish/v1/$metadata#Task.Task",
    "@odata.etag": "\"1745539617\"",
    "@odata.id": "/redfish/v1/TaskService/Tasks/8",
    "@odata.type": "#Task.v1_4_2.Task",
    "Description": "Task for Update Service Task",
    "EndTime": "2025-04-25T00:06:58+00:00",
    "HidePayload": false,
    "Id": "8",
    "Messages": [
        {
            "@odata.type": "#Message.v1_0_8.Message",
            "Message": "Image '/var/tmp/bundles/nvfw_DGX_0005_250415.1.1_dbg-
↪signed.fwpkg' is being transferred to 'HostBMC_0'.",
            "MessageArgs": [
                "/var/tmp/bundles/nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg",
                "HostBMC_0"
            ],
            "MessageId": "Update.1.0.TransferringToComponent",
            "Resolution": "None.",
```

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```
            "Severity": "OK"
        },
        {
            "@odata.type": "#Message.v1_0_8.Message",
            "Message": "Task /redfish/v1/UpdateService/upload is running
↪normally.",
            "MessageArgs": [
                "/redfish/v1/UpdateService/upload"
            ],
            "MessageId": "Task.1.0.Running",
            "Resolution": "None",
            "Severity": "OK"
        }
    ],
    "Name": "Update Service Task",
    "PercentComplete": 0,
    "StartTime": "2025-04-25T00:07:01+00:00",
    "TaskState": "Running",
    "TaskStatus": "OK"
}
Update is still running.
Printing Task status for IP: 2.2.2.2
Printing Task status for system: EXTERNAL_DGX_SYSTEM
--------------------------------------------------------------------------------
↪----------------------------------------
 Task Info for Id: 2
StartTime: 2025-04-25T08:06:22+08:00
TaskState: Running
PercentComplete: 57
TaskStatus: Warning
EndTime: 1970-01-01T08:00:00+08:00
Overall Task Status: {
    "@odata.context": "/redfish/v1/$metadata#Task.Task",
    "@odata.etag": "\"1745539580\"",
    "@odata.id": "/redfish/v1/TaskService/Tasks/2",
    "@odata.type": "#Task.v1_4_2.Task",
    "Description": "Task for Update Service Task",
    "EndTime": "1970-01-01T08:00:00+08:00",
    "HidePayload": false,
    "Id": "2",
    "Messages": [
        {
            "@odata.type": "#Message.v1_0_8.Message",
            "Message": "Image '/var/tmp/bundles/nvfw_DGX_0005_250415.1.1_dbg-
↪signed.fwpkg' is being transferred to 'HostBMC_0'.",
            "MessageArgs": [
                "/var/tmp/bundles/nvfw_DGX_0005_250415.1.1_dbg-signed.fwpkg",
                "HostBMC_0"
            ],
            "MessageId": "Update.1.0.TransferringToComponent",
            "Resolution": "None.",
            "Severity": "OK"
```

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```
        },
        {
            "@odata.type": "#Message.v1_0_8.Message",
            "Message": "Task /redfish/v1/UpdateService/upload is running
↪normally.",
            "MessageArgs": [
                "/redfish/v1/UpdateService/upload"
            ],
            "MessageId": "Task.1.0.Running",
            "Resolution": "None",
            "Severity": "OK"
        }
    ],
    "Name": "Update Service Task",
    "PercentComplete": 0,
    "StartTime": "2025-04-25T00:07:01+00:00",
    "TaskState": "Running",
    "TaskStatus": "OK"
}
    Update is still running.
    ...

            {
            "@odata.type": "#Message.v1_0_8.Message",
            "Message": "Device 'CPLDMID_0' successfully updated with image '0.
↪2.1.4'.",
            "MessageArgs": [
                "CPLDMID_0",
                "0.2.1.4"
            ],
            "MessageId": "Update.1.0.UpdateSuccessful",
            "Resolution": "None.",
            "Severity": "OK"
        },
        {
            "@odata.type": "#Message.v1_0_8.Message",
            "Message": "Task /redfish/v1/UpdateService/upload has completed.",
            "MessageArgs": [
                "/redfish/v1/UpdateService/upload"
            ],
            "MessageId": "Task.1.0.Completed",
            "Resolution": "None",
            "Severity": "OK"
        }
    ],
    "Name": "Update Service Task",
    "PercentComplete": 100,
    "StartTime": "2025-04-25T00:07:01+00:00",
    "TaskState": "Completed",
    "TaskStatus": "OK"
}
Update is successful.
```

After the update, you must perform an AC cycle on each system for the changes to take effect.

Chapter 27. Performing a BMC Factory Reset

- Reset the BMC to factory default values:

```
nvfwupd --target ip=<bmc-ip-address> user=admin password=admin perform_
↪factory_reset
```

Example Output

```
Factory Reset request successful
Task State:
{"@odata.context": "/redfish/v1/$metadata#Task.Task", "@odata.id": "/
↪redfish/v1/TaskService/Tasks/2", "@odata.type": "#Task.v1_4_2.Task",
↪"Description": "Task for Manager ResetToDefaults", "Id": "2", "Name":
↪"Manager ResetToDefaults", "TaskState": "New"}
```

Chapter 28. Forcing a Firmware Downgrade

28.1. Prerequisites

- Refer to *Viewing the Installed Firmware and Package Versions* to confirm that the firmware package has the firmware version that you want.

28.2. Procedure

1. Enable the `ForceUpdate` flag on the BMC:

```
nvfwupd --target ip=<bmc-ip-address> user=admin password=admin force_
↪update enable
```

Example Output

```
ForceUpdate flag was successfully set True on the system.
```

2. Confirm the `ForceUpdate` flag status:

```
nvfwupd --target ip=<bmc-ip-address> user=admin password=admin force_
↪update status
```

Example Output

```
ForceUpdate is set to True
```

3. Perform the firmware update.
4. Disable the `ForceUpdate` flag on the BMC:

```
nvfwupd --target ip=<bmc-ip-address> user=admin password=admin force_
↪update disable
```

Example Output

```
ForceUpdate flag was successfully set False on the system.
```

5. Confirm the `ForceUpdate` flag status:

```
nvfwupd --target ip=<bmc-ip-address> user=admin password=admin force_
↪update status
```

Example Output

```
ForceUpdate is set to False
```

Chapter 29. Troubleshooting an Unsuccessful Firmware Update

29.1. Firmware Update Terminates due to Component Not Found

When performing a firmware update of the GPU tray with the motherboard firmware package, the firmware update stops with the following output message:

```
...
{
  "@odata.type": "#Message.v1_0_8.Message",
  "Message": "Given PLDMBundle Status Message : Requested component was not
↪found in the firmware bundle.",
  "MessageArgs": [
    "Requested component was not found in the firmware bundle."
  ],
  "MessageId": "UpdateService.1.0.FwUpdateStatusMessage",
  "Resolution": "None",
  "Severity": "Warning"
},
...
```

The message indicates that the firmware file specified by the `-p` argument of the `nvfwupd` command is invalid. Retry the update and specify the firmware file that matches the component. For example, use the GPU firmware file, which contains the HGX string, for the GPU tray update. Refer to *Version 25.01.1* for the firmware file names and components.

29.2. No Devices Where Detected for Handle ID 0

When performing a firmware update with the Redfish API, the following output message indicates that the firmware file specified in the `-F UpdateFile=` argument is not the correct file for the component specified in the JSON file.

```
...
{
  "@odata.type": "#Message.v1_0_8.Message",
  "Message": "Given PLDMBundle Status Message : No devices where detected for
↪handle id 0.",
  "MessageArgs": [
    "No devices where detected for handle id 0"
  ],
  "MessageId": "UpdateService.1.0.FwUpdateStatusMessage",
  "Resolution": "None",
  "Severity": "Warning"
},
...
```

Retry the update and specify the firmware file that matches the component. Refer to Redfish APIs Support in the *NVIDIA DGX B200 System User Guide* for information about using the Redfish API.

29.3. Wait for Firmware Update Started ID

The output for an unsuccessful firmware update using the `nvfwupd` command can look like the following example:

```
FW recipe: ['nvfw_DGXB200_xxxx_xxxxxx.x.x.fwpkg']
{"@odata.type": "#UpdateService.v1_6_0.UpdateService", "Messages": [{"@odata.
↪type": "#Message.v1_0_8.Message", "Message": "A new task /redfish/v1/
↪TaskService/Tasks/4 was created.", "MessageArgs": ["/redfish/v1/TaskService/
↪Tasks/4"], "MessageId": "Task.1.0.New", "Resolution": "None", "Severity":
↪"OK"}, {"@odata.type": "#Message.v1_0_8.Message", "Message": "The action
↪UpdateService.MultipartPush was submitted to do firmware update.",
↪"MessageArgs": ["UpdateService.MultipartPush"], "MessageId": "UpdateService.
↪1.0.StartFirmwareUpdate", "Resolution": "None", "Severity": "OK"}]}
FW update started, Task Id: 4

Wait for FirmwareUpdateStarted Id in Messages
Wait for FirmwareUpdateStarted Id in Messages
 Task Message: Task /redfish/v1/UpdateService/upload has stopped due to an
↪exception condition.
Firmware update failed, retry the firmware update
```

Retry the firmware update, as indicated in the command output.

Chapter 30. Version 25.02.6

30.1. Highlights

30.1.1. Added Support

- Fixed an issue where a boot order setting via Redfish API did not take effect.

30.1.2. BMC Fixes

- No BMC fixes for the initial release.

30.1.3. SBIOS Fixes

- Fixed an issue where a boot order setting via Redfish API did not take effect.

30.1.4. The nvfwupd Command Updates

- Added support for parallel firmware updates through the YAML configuration file.
- Added the `--json` option to the `update_fw`, `show_update_progress`, and `force_update` commands.
- Added IPv6 support.
- Deprecated the `targets` sub-option for multi-target input. Use `config.yaml` input instead.

30.2. Firmware Package Details

This firmware release supports the following systems:

- NVIDIA DGX B200

This firmware release supports the following operating systems:

- NVIDIA DGX OS 7.0.1 and higher

For more information about the operating systems, refer to the NVIDIA Base OS documentation.

You can download firmware packages from the NVIDIA Enterprise Support Portal.

The following table shows the firmware package files:

Components	Sample File Name
Combined archive	`DGXB200_25.02.6.tar.gz` The combined archive includes the firmware for the system components and the firmware for the GPU tray.
▶ Motherboard tray package ▶ GPU tray transition package ▶ GPU tray latest package	▶ `nvfw_DGX_250220.1.0.fwpkg` ▶ `nvfw_DGX-HGX-B100-B200x8_250114.1.0.fwpkg` ▶ `nvfw_DGX-HGX-B100-B200x8_250124.1.3.fwpkg`

The following table shows the information about component firmware versions.

Component	Version
Host BMC	25.02.12
Host BMC ERoT	04.0058
SBIOS ERoT	04.0058
SBIOS	**1.6.7** Refer to *SBIOS Changes for DGX B200 Systems* for the list of changes.
Motherboard CPLD	0.2.1.9
Midplane CPLD	0.2.1.3
PSU (Delta ECD16020137)	Primary 0204 Secondary 0201 Community 0204
LiteOn	0.5.0.5
Broadcom Gen5 PCIe Switch (PEX89072-B01)	Switch 0: 0.0.7 Switch 1: 1.0.7
Astera Labs Gen5 PCIe Retimer (PT5161L)	2.07.19
Network (Cluster) Card - ConnectX-7	28.43.2026
Network (Storage) Card - ConnectX-7	28.43.2026
Network Card - BlueField-3	32.43.2024
VBIOS	97.00.7F.00.01
NVSwitch (GPU Tray)	35.2014.1638
ERoT (GPU Tray)	02.0192
HMC (GPU Tray)	HGX-24.11-1-rc57
FPGA (GPU Tray)	1.61
PCIe Switch (GPU Tray)	1.9.5F
Astera Labs Gen5 PCIe Retimer (GPU Tray) (PT5161L)	2.7.20
Intel 10G Ethernet	v3.60
Intel Ethernet Network Adapter (E810-C-Q2)	v4.50

30.3. Firmware Update Procedure

Refer to *Firmware Update Steps*.

Chapter 31. Version 25.02.5

31.1. Highlights

31.1.1. Added Support

- Introduces support for the NVIDIA DGX™ B200 System.

31.1.2. BMC Fixes

- No BMC fixes for the initial release.

31.1.3. SBIOS Fixes

- No SBIOS fixes for the initial release.

31.1.4. The nvfwupd Command Updates

- Added support for parallel firmware updates through the YAML configuration file.
- Added the `--json` option to the `update_fw`, `show_update_progress`, and `force_update` commands.
- Added IPv6 support.
- Deprecated the `targets` sub-option for multi-target input. Use `config.yaml` input instead.

31.2. Firmware Package Details

This firmware release supports the following systems:

- NVIDIA DGX B200

This firmware release supports the following operating systems:

- NVIDIA DGX OS 7.0.1 and higher

For more information about the operating systems, refer to the NVIDIA Base OS documentation.

You can download firmware packages from the NVIDIA Enterprise Support Portal.

The following table shows the firmware package files:

Components	Sample File Name
Combined archive	`DGXB200_25.02.5.tar.gz` The combined archive includes the firmware for the system components and the firmware for the GPU tray.
▶ Motherboard tray package ▶ GPU tray transition package ▶ GPU tray latest package	▶ `nvfw_DGX_250212.1.1.fwpkg` ▶ `nvfw_DGX-HGX-B100-B200x8_250114.1.0.fwpkg` ▶ `nvfw_DGX-HGX-B100-B200x8_250124.1.3.fwpkg`

The following table shows the information about component firmware versions.

Component	Version
Host BMC	25.02.12
Host BMC ERoT	04.0058
SBIOS ERoT	04.0058
SBIOS	1.6.6
Motherboard CPLD	0.2.1.9
Midplane CPLD	0.2.1.3
PSU (Delta ECD16020137)	Primary 0204 Secondary 0201 Community 0204
LiteOn	0.5.0.5
Broadcom Gen5 PCIe Switch (PEX89072-B01)	Switch 0: 0.0.7 Switch 1: 1.0.7
Astera Labs Gen5 PCIe Retimer (PT5161L)	2.07.19
Network (Cluster) Card - ConnectX-7	28.43.2026
Network (Storage) Card - ConnectX-7	28.43.2026
Network Card - BlueField-3	32.43.2024
VBIOS	97.00.7F.00.01
NVSwitch (GPU Tray)	35.2014.1638
ERoT (GPU Tray)	02.0192
HMC (GPU Tray)	HGX-24.11-1-rc57
FPGA (GPU Tray)	1.61
PCIe Switch (GPU Tray)	1.9.5F
Astera Labs Gen5 PCIe Retimer (GPU Tray) (PT5161L)	2.7.20
Intel 10G Ethernet	v3.60
Intel Ethernet Network Adapter (E810-C-Q2)	v4.50

31.3. Firmware Update Procedure

Refer to *Firmware Update Steps*.

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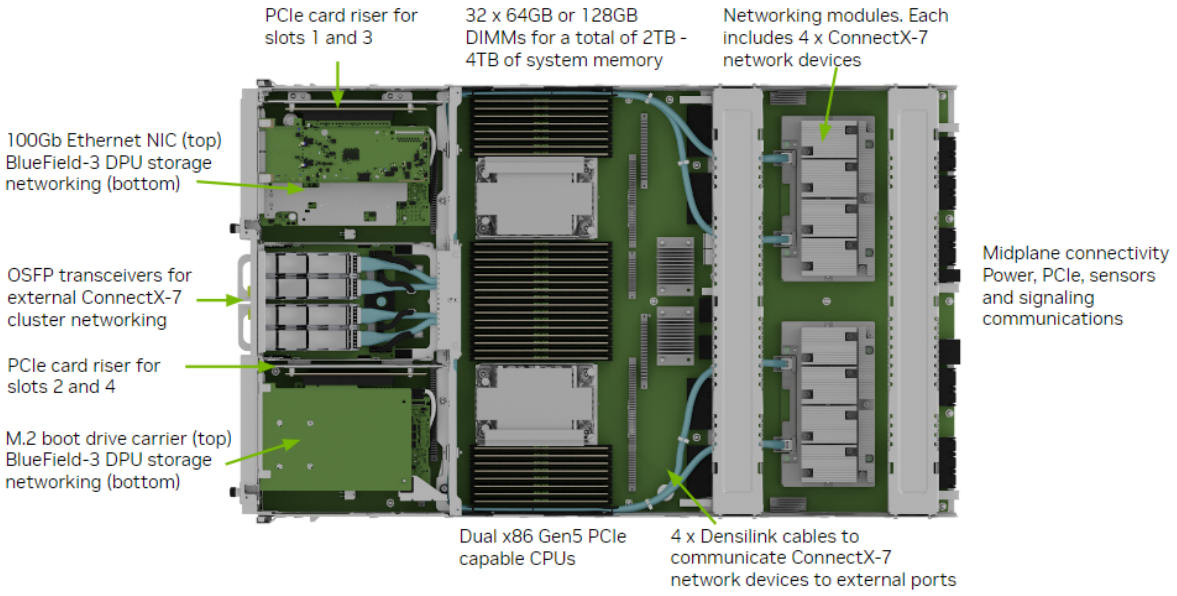
Chapter 34. About Firmware Updates

This topic provides an overview of firmware updates on the NVIDIA DGX™ B200 system.

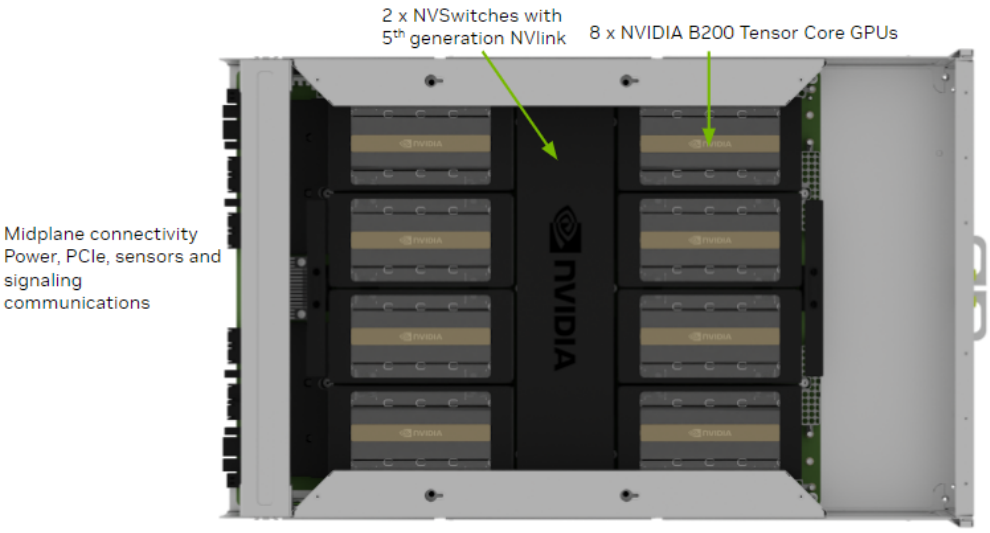
34.1. Firmware Updatable Components

The NVIDIA DGX™ B200 system has several firmware updatable components. Some of the components are on the following two trays in the system:

- The motherboard tray has components, such as the CPUs, PCH, BMC as shown in the following figure:



- The GPU tray has components, such as the GPUs, NVSwitches, HMC as shown in the following figure:



You can update the firmware on the NVIDIA DGX B200 system components out-of-band (OOB) by using Redfish APIs or from the host operating system by using the command-line interface (CLI) commands.

34.2. Firmware Update Prerequisites

- You can download firmware packages from the NVIDIA Enterprise Support Portal.
- You must know the BMC IP address, a user name, and a password. The sample commands in this document show `admin` for both the user name and the password.
- You must have the `nvfwupd` executable or know how to use the Redfish API.

34.3. Firmware Update Methods

Most of the sample commands in this document show how to update firmware using the `nvfwupd` command. You can download the executable from the NVIDIA Enterprise Support Portal.

- For more information about the command, refer to *About the nvfwupd Command*.
- For best practice when updating the firmware, follow the instructions in *Firmware Update Steps*.

You can run the `nvfwupd` command interactively to update systems. Most command examples in this document show this interactive approach. If you have several systems to update, you can create a JSON file that identifies the systems to update. Refer to *Multiple System Firmware Updates* for more information.

An alternative to the `nvfwupd` command is to update firmware by using the Redfish API. The BMC network interface provides remote management with Redfish APIs.

The *Known Issues* for updating firmware and the *firmware update steps* still apply when you use the Redfish API.

Refer to Redfish APIs Support in the *NVIDIA DGX B200 System User Guide* for more information and sample commands. The sample commands show how to update firmware with the `curl` command.

34.4. Firmware Update Activation

After the firmware update, you must perform one or more of the following tasks to activate the firmware update, depending on the components being updated:

- BMC component

  Reset the BMC by running the following command:

  ```
  sudo ipmitool mc reset cold
  ```

- PCIe Switch, PCIe Retimer, BIOS, and HGX (GPU Tray) components

  Perform a cold reset on the system using the following command:

  ```
  sudo ipmitool chassis power cycle
  ```

- EROT and CPLD components

  Perform an AC power cycle on the system by unplugging all the power supplies and then reconnecting them either manually or through an external PDU device.

  Note

  The AC power cycle will activate firmware for all updated components.

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