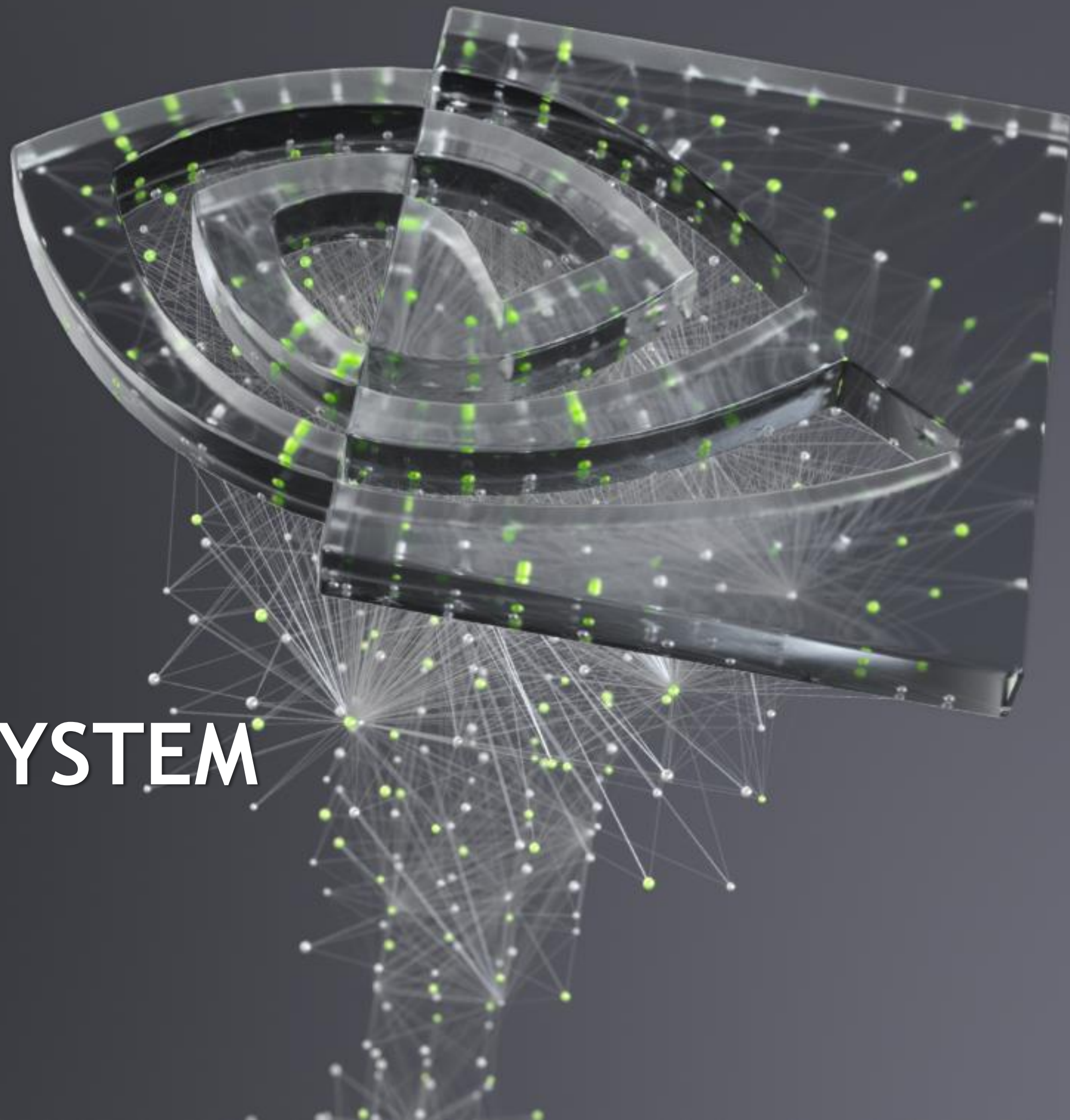


MODULAR SWITCH SYSTEM



EXAMPLE MODULAR SYSTEM

- NVIDIA Mellanox SN4800 modular switch platform
 - Based on Spectrum-3 ASIC managed by mlxsw driver over PCI
- 8 slots for "line cards"
 - Each slot is populated with four 400Gb SerDeses
 - no "built-in" ports on the mainboard
 - Line card is basically a SerDes to port SFP cages adaptor
- Line card types
 - Line card type "A": 4x QSFPDD 400Gb ports
 - 1:1 SerDes <-> port mapping
 - Line card type "B": 16x QSFP28 100Gb ports
 - 1:4 SerDes <-> port mapping using 4 "gearboxes"
 - Line card type "C": 8x QSFP56 200Gb ports
 - 1:2 SerDes <-> port mapping
- No way to do plug and play :-/ The line card type can be obtained over i2c only, FW cannot access it.
 - Provisioning - user must tell which slot to provision with which line card type

MLXSW / DEVLINK SUPPORT - WHAT IS NEEDED?

- List current (FW flash-stored) provisioning
- Expose info about a line card and gearboxes on it (e. g. FW version)
- Provision/unprovision the slot with line card type
 - List of supported line cards obtained from the packed INIs file
- React to activation event (triggered outside mlxsw)
- Gearbox FW burn

- List current (FW flash-stored) provisioning

```
$ devlink lc show
```

```
pci/0000:00:10.0:
```

```
lc 1 state active type 4X400G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
lc 2 state active type 4X400G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
lc 3 state provisioned type 4X400G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
lc 4 state provisioned type 4X400G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
lc 5 state active type 16X100G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
devices:
```

```
device 0 flashable true component lc5_dev0
```

```
device 1 flashable false
```

```
device 2 flashable false
```

```
device 3 flashable false
```

```
lc 6 state provisioned type 4X400G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
lc 7 state provisioned type 4X400G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
lc 8 state provisioned type 4X400G
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

- Expose info about a line card and gearboxes on it (e. g. FW version)

```
$ devlink lc -v show pci/0000:00:10.0 lc 5
```

```
pci/0000:00:10.0:
```

```
lc 5 state active type 16X100G
```

```
info:
```

```
versions:
```

```
fixed:
```

```
hw.revision 2
```

```
running:
```

```
ini.version 4
```

```
supported_types:
```

```
4x400G 8x200G 16x100G
```

```
devices:
```

```
device 0 flashable true component lc5_dev0
```

```
info:
```

```
versions:
```

```
running:
```

```
fw 4.2.10260
```

```
device 1 flashable false
```

```
info:
```

```
versions:
```

```
running:
```

```
fw 4.2.10260
```

```
device 2 flashable false
```

```
info:
```

```
versions:
```

```
running:
```

```
fw 4.2.10260
```

```
device 3 flashable false
```

```
info:
```

```
versions:
```

```
running:
```

```
fw 4.2.10260
```

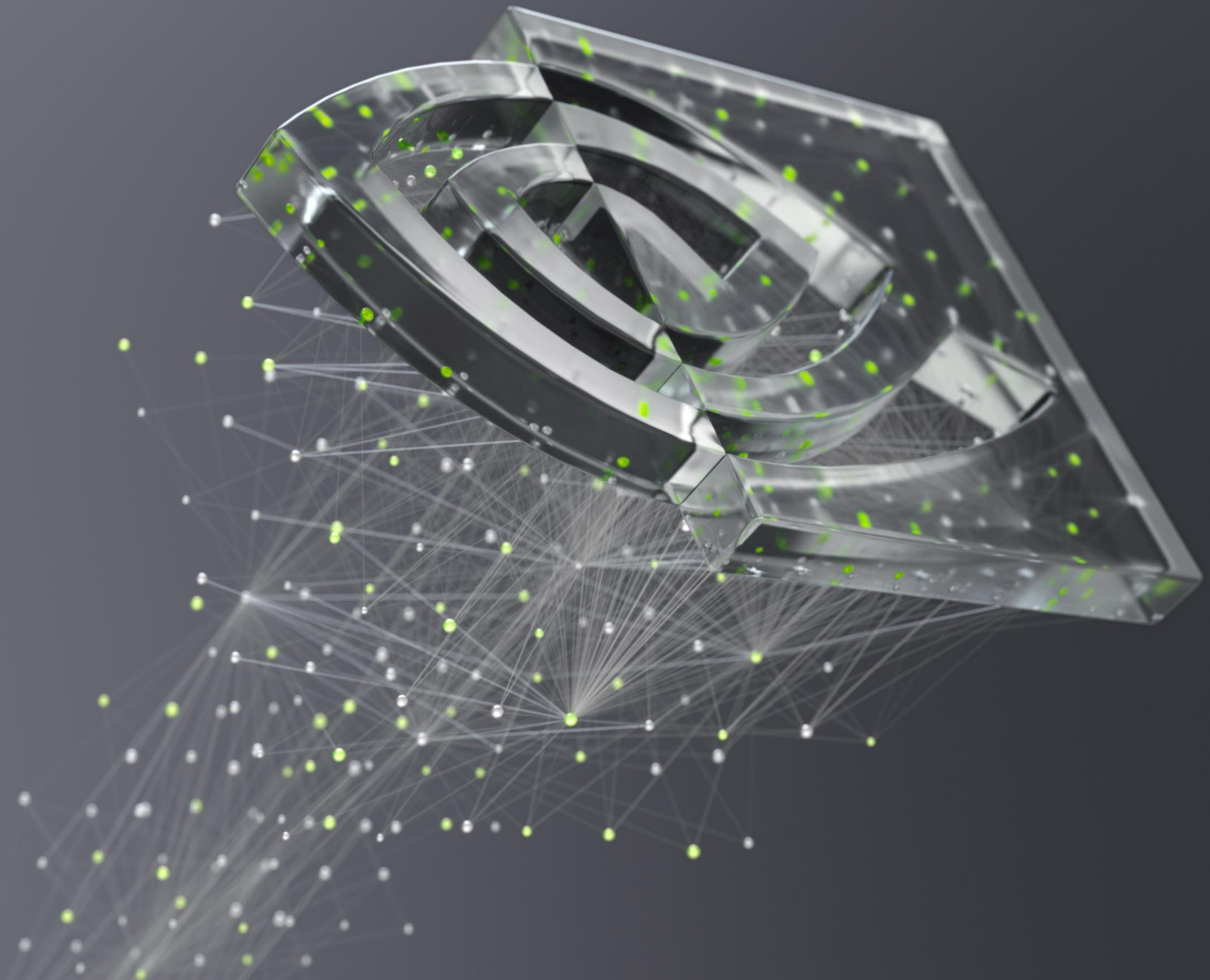
- Provision/unprovision the slot with line card type

```
$ devlink lc set pci/0000:00:10.0 lc 3 type 16x100G
```

```
$ devlink lc set pci/0000:00:10.0 lc 3 notype
```

- Gearbox FW burn

```
$ devlink dev flash pci/0000:00:10.0 file mellanox/fw-AGB-rel-14_2008_2932-708-EVB.mfa2 component lc5_dev0
```

nVIDIA