Driver and Software Installation

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The following sections describe how to obtain and install Intel® Gaudi® software and drivers.

Installation Options

The following lists the available options for driver and software installation:

- **Install driver and software**: Installs all the packages automatically using `habanalabs-installer.sh` script. This is the recommended installation method.
- **Upgrade driver and software**: Enables upgrading an existing installation to the latest version.
- **Custom driver and software installation**: Allows installing each package manually for a fine-grained control over the installation process.

> **Note**
>
> - Make sure to review the currently supported versions and operating systems listed in the Support Matrix.
> - Driver and software installation is not required if you are using the Intel Gaudi Base Operator for Kubernetes or OpenShift.
> - Installing the package with internet connection available allows the network to download and install the required dependencies for the Intel Gaudi software package (apt get, yum, dnf install or pip install etc.).

Install Driver and Software

1. Install the driver and software using `habanalabs-installer.sh` script. For further details on the package installers included, see Intel Gaudi Software Installers table.

```
wget -nv https://vault.habana.ai/artifactory/gaudi-installer/1.19.1/habanalabs-installer.sh
chmod +x habanalabs-installer.sh
./habanalabs-installer.sh install --type base
```

Note

- For further instructions on how to control the script attributes, refer to the help guide using `./habanalabs-installer.sh --help` command.
- Adding `--skip-driver-load` option to the installation command skips loading the drivers.
- The installation sets the number of huge pages automatically.
- `habanalabs-container-runtime` and `habanalabs-qual-workloads` are not automatically installed with the `habanalabs-installer.sh`. Make sure to install them as shown in the steps below. Additionally, `habanatools` is not automatically installed. If you are using TPC and writing your own kernels, refer to TPC Tools Installation Guide to install `habanatools` package.

2. If needed, update the FW as described in Firmware Upgrade.

3. Install **optional** packages:

Ubuntu 24.04/22.04 | RHEL 8.6/9.2/9.4/TencentOS3.1 | SUSE 15.5

Install `habanalabs-container-runtime`. package. This package is required for running workloads in containers. Both Docker and Kubernetes are supported:

```
sudo apt install -y habanalabs-container-runtime
```

Install `habanalabs-qual-workloads` package. This package is required for running ResNet-50 training stress test plugin:

```
sudo apt install -y habanalabs-qual-workloads
```

Install `ethtool` if you are running a multi-server scale-out and need to bring up the accelerator interfaces:

```
sudo apt install -y ethtool
```

Bring up Accelerator Interfaces

If you are running a multi-server scale-out and have the accelerator interfaces physically connected, make sure the network interfaces are brought up. These interfaces need to be brought up every time the kernel module is loaded or unloaded and reloaded. A reference on how to bring up the interfaces is provided in the manage_network_ifs.sh. Note that the script can be found at `/opt/habanalabs/qual/[gaudi3,gaudi2,gaudi1]/bin/`.

1. Bring up accelerator interfaces:

```
# manage_network_ifs.sh requires ethtool
/opt/habanalabs/qual/[gaudi3,gaudi2,gaudi1]/bin/manage_network_ifs.sh --up
```

2. Check the accelerator interfaces status:

```
/opt/habanalabs/qual/[gaudi3,gaudi2,gaudi1]/bin/manage_network_ifs.sh --status
```

Output example:

```
accel0
3 ports up (2, 3, 7)
accel1
3 ports up (17, 20, 21)
accel2
3 ports up (14, 15, 19)
accel3
3 ports up (5, 8, 9)
accel4
3 ports up (17, 20, 21)
accel5
3 ports up (2, 3, 7)
accel6
3 ports up (5, 8, 9)
accel7
3 ports up (14, 15, 19)
```

Note

The `accel` label indicates the index assigned to the OAM by the OS. It corresponds to the `AIP` label that the `hl-smi` tool outputs. For more details, see System Management Interface Tool (hl-smi).

Upgrade Driver and Software

1. Upgrade the driver and software:

```
 wget -nv https://vault.habana.ai/artifactory/gaudi-installer/1.19.1/habanalabs-installer.sh
 chmod +x habanalabs-installer.sh
 ./habanalabs-installer.sh upgrade --type base
```

2. Perform Steps 2 from the previous section Install Driver and Software to complete the upgrade.

Custom Driver and Software Installation

To install each package individually, refer to Custom Driver and Software Installation.

Note

While you can install each package manually, using the `habanalabs-installer.sh` script is the recommended method for installation. For further details, see Driver and Software Installation.