Configuring 100Gb and 200Gb Link Speeds on the Broadcom 57508 Ethernet Adapters

Planning / Implementation

The ThinkSystem Broadcom 57508 100GbE QSFP56 Ethernet adapters are a high-performance low-power 2-port 100 GbE adapter with a PCIe 4.0 host interface that offers TruFlow intelligent flow processing and supports advanced networking technologies such as VXLAN, NVGRE, Geneve, RoCE, SDN and NFV, to facilitate the management of data networks and to enable service provider solutions.

For technical information about the adapter including server and operating system support, see the Lenovo Press product guide.

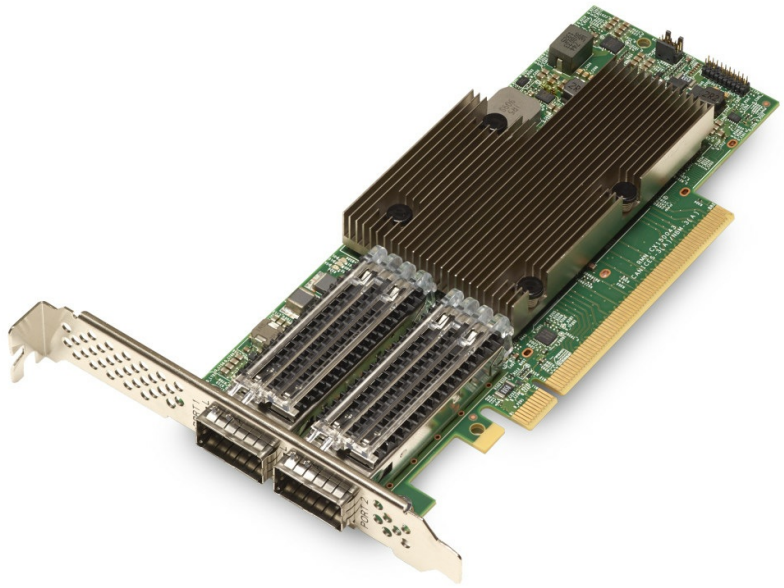

Figure 1. ThinkSystem Broadcom 57508 100GbE QSFP56 2-port PCIe 4 Ethernet Adapter

This document guide how to configure the 100Gb and 200Gb speeds for the adapter. The adapter supports 2 modes:

- 2x 100Gb ports
- 1x 200Gb port

The 2x 100Gb mode is the default. To change the mode, the user will need to manually set the relevant configuration under the UEFI System Setup.

Configuring 100G Forced Link Speed

By default, the 57508 dual-port adapter is automatically configured for 100G speeds. This section provides information on configuring the adapter to force 100G link speed.

The steps in the UEFI System Setup are as follows:

1. Boot system to the F1 UEFI setup
2. Go to **System Settings > Network > AUT > Device Configuration** Menu.
3. Ensure the **Port Enablement** parameter is set to **Enable all ports**.

Figure 1. Port Enablement setting

4. Go to **System settings > Network > AUT > Link Configuration** .
5. Set the **Operational Link Speed** parameter to **100Gbps**.

Figure 2. Operational Link Speed setting

6. The next step is to set the **Port Link Training** parameter, based on the link cable type you are using. The default is Disabled.

Figure 3. Port Link Training setting

Configure Port Link Training when using forced link speed. Link training should be enabled when using DAC cables in PAM4 mode and link training should be disabled when using AOC/Optical modules. See the table for the correct setting for each cable type.

Table 1. Link Training Configuration setting based on cable type

Cable Type	**Link Training Enable/Disable**
Passive Direct Attach Copper (DAC)	Link Training - **Enable**
Active Direct Attach Copper (DAC)	Link Training - **Disable**
Active Optical cable (AOC)	Link Training - **Disable**
Active Copper Cable (ACC)	Link Training - **Disable**

Tip: The setting of "Link Training" as enabled or disabled depends on both the modules and the switches. The guidance you get is just a general idea, not the way you have to follow. It is also not related to PAM4 or not.

When you have a passive cable which usually is DAC, then you need to enable Link training no matter whether it is forced or auto speed.

With active cables, you need to disable Link Training as the module will do the link signal integrity without relying on the NIC firmware when the auto is not used.

7. Save the changes in UEFI and reboot the system to take effect.

Configuring 200G Forced Link Speed

This section provides information on configuring the adapter to force 200G speeds.

The steps in the UEFI System Setup are as follows:

1. Boot system to the F1 UEFI setup
2. Go to **System Settings > Network > AUT > Device Configuration** Menu.

3. Set the **Port Enablement** parameter to Disable port 2.

Figure 4. Port Enablement setting

4. Go to **System Settings > Network > AUT > Link Configuration** .
5. Set the **Operational Link Speed** parameter to **200Gbps PAM4**.

Figure 5. Operational Link Speed setting

6. Set the **Port Link Training parameter** based on the link cable type. The default is Disabled.

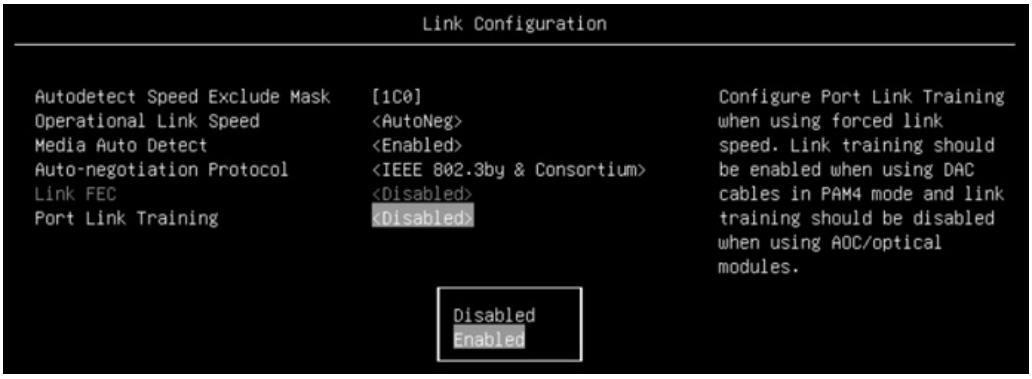

Figure 6. Port Link Training setting

Configure Port Link Training when using forced link speed. Link training should be enabled when using DAC cables in PAM4 mode and link training should be disabled when using AOC/Optical modules. See the table for the correct setting for each cable type.

Table 2. Link Training Configuration per Cable Type

Cable Type	Link Training Enable/Disable
Passive Direct Attach Copper (DAC)	Link Training - Enable
Active Direct Attach Copper (DAC)	Link Training - Disable
Active Optical cable (AOC)	Link Training - Disable
Active Copper Cable (ACC)	Link Training - Disable

Tip: The setting of "Link Training" as enabled or disabled depends on both the modules and the switches. The guidance you get is just a general idea, not the way you have to follow. It is also not related to PAM4 or not.

When you have a passive cable which usually is DAC, then you need to enable Link training no matter it is forced or auto speed.

With active cables, you need to disable Link Training as the module will do the link signal integrity without relying on the NIC firmware when the auto is not used.

7. Save the changes in UEFI and reboot the system to take effect.

Resources

For more information, see the following resource:

- ThinkSystem Broadcom 57508 100GbE QSFP56 Ethernet Adapters product guide: https://lenovopress.lenovo.com/lp1417-thinksystem-broadcom-57508-100gbe-ethernet-adapters

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