

# So You Want to...

## Install Emerson Network Power's PCIE-8120 into a HP DL380p Gen8 Server?



Photo 1. HP DL380p Gen 8



Photo 2. PCI Express Riser Cards

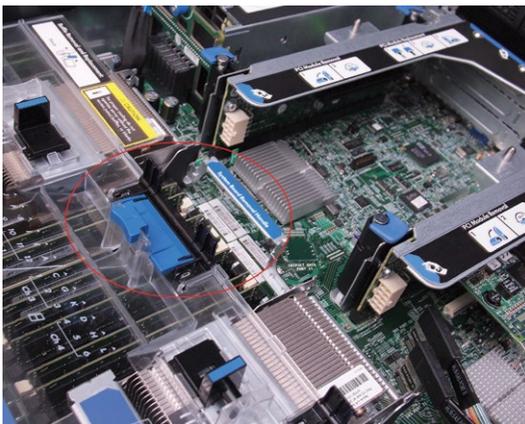


Photo 3. Latch on System Fan Baffle

*This document covers aspects of fitting the Emerson Network Power PCIE-8120 media processing accelerator card into a HP ProLiant DL380p server.*

### THE HP DL380P GEN 8 SERVER

The HP ProLiant DL380p server is the newest generation 2U, 2 Socket HP rack mount server based on Intel's E5-26xx Sandy Bridge Xeon technology. The server is available in pre-configured models with a single CPU and options for additional features such as:

- Dual CPU configuration
- Redundant power supplies
- Scalable memory configuration
- Hard drive storage configurations
- PCI Express I/O and riser cards

For more details, visit the HP Website at [www.hp.com/us/](http://www.hp.com/us/).

### PCIE-8120 HARDWARE INSTALLATION

#### Hardware Installation Dependencies:

- Dual CPU configuration mandatory for 2x PCIE-8120
- 3 and/or 2 slot PCI Express riser card PN: 653206-B21 (3 Slots) 653208-B21 (2 slots)

Before installing the Emerson PCIE-8120(s) into the HP DL380p, please ensure compliance with the above hardware dependencies. There are two types of PCI Express riser cards (PN: 653206-B21 and 653208-B21). 653206-B21 has 3 Slots and 653208-B21 has 2 slots. The PCIE-8120 can only be installed on the top slot of either of these riser cards. Please note: if installing (2) PCIE-8120 cards, you will need to the dual CPU configuration of the server as each PCI express riser card is routed to a single CPU chipset.

To install the PCIE8120 card(s), first remove the top cover of the server. You must then remove each riser card from the system and insert the PCIE-8120 into the top slot. When reinstalling the riser card back into the system, you will need to raise the blue latch/latches on the system fan baffle and remove the thin metal cover from rear I/O panel. Once reinstalled, re-screw in the riser cards and lower the latch to properly secure the board(s).

### NEBS GRADE SERVER RECONFIGURATION

If NEBS compliance is required, please install HP DL380p NEBS Conversion Cage Kit (HP PN: 707865-B21) and ensure a full set of fans are present. A full set of fans are preinstalled if a two processor configuration is in use. Additional installation details can be found on the HP website, in the **HP ProLiant DL380p Gen8 Carrier-Grade Server Read Before Install Carrier-Grade Instructions**. PCIE-8120 is designed for NEBS usage out of box and will not need any reconfiguration.



Photo 4. PCI Express Riser Card Re-installation

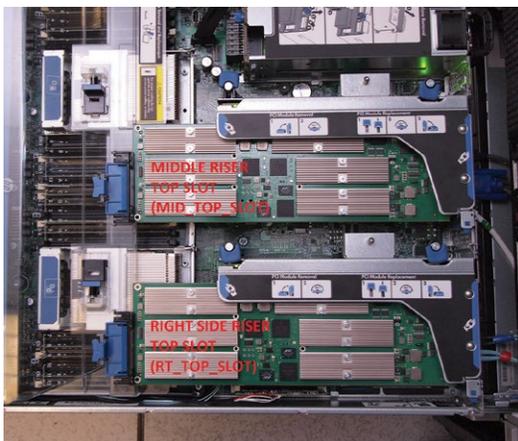


Photo 5. Dual PCIE-8120 Installation

## INSTALLING THE SOFTWARE PACKAGE

### Software Installation Dependencies:

- Server running Red Hat Enterprise Linux 6.3 or CENTOS 6
- TFTP-server, tftp, dhcp, gnu-c++, tcl, expect, telnet, wireshark, vconfig, xinetd, net-tools, pciutils, ethtool, policycoreutils-python
- Disable firewalls (ex: service iptables stop)
- Unzip and install Emerson Basic Blade Services (BBS) package (*pcie8120-<version>.zip*)
- Unzip and install Octasic software package (*octasic-sdk-<version>.zip*)

Proceed with software installation as documented in the PCIE-8120 Installation and User Manual found in *pcie8120-doc-<version>.zip*. PCIE-8120 documentation, Emerson BBS and Octasic software packages can be obtained via Emerson SWORDS portal or through local Emerson support personnel.

## SYSTEM OPERATION AND THERMAL OPTIMIZATION

The HP DL380p system fans produce turbulent air within the system to cool the PCI Express cards. Because of these conditions we highly recommend monitoring both the PCIE-8120 air inlet and outlet temperatures. This can be done using the “read-sensors” tool provided with the Emerson BBS package. If either temperature sensor reports a temperature of 60 °C, you may want to check whether anything mechanically is disrupting the system air flow or your system environment conditions have changed. If neither situation has occurred, the HP DL380p has three thermal configuration profiles which control the system fans’ behavior. In the BIOS setup screen under Advanced Options, you can set up the system into three different thermal configuration profiles: Increased Cooling, Optimum Cooling, and Maximum Cooling.

In data center environments (25 °C ambient), we recommend using Optimal or Increased Cooling profiles. During normal operation, you can expect the card temperature readings to be anywhere between 30 and 50 °C. If the temperature reading should go above 60 °C, you should use the Maximum Cooling profile and/or apply additional CPU loading. We have noticed that CPU loading has a direct relationship with system fan speed (e.g. increased CPU loading equals increased system fan speed). For extended (NEBS abnormal 55 °C) operation conditions, we recommend Maximum Cooling profile. Please ensure air flow is such that card temperature sensors reading do not go above 80 °C as these high temperatures may cause damage to the board. *Please note, the position of the riser card could also help lower turbulent air surrounding the card. Installing the card on the middle riser card instead of the system right side riser card drops the board air inlet temperature a few degrees and the board air outlet temperature over 5 °C.*

If you should run into any questions or issues with the PCIE-8120 with the HP DL380p, please contact your local Emerson Field Application Engineer (FAE).



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