So You Want to...
Install Artesyn Embedded Technologies’ SharpMedia™ into an HP Bladesystem c7000 Platinum Enclosure with an HP ProLiant Gen 8 server blade?

This document covers aspects of fitting the SharpMedia™ PCIe-8120 media processing accelerator card into an HP BladeSystem c7000 Platinum Enclosure configured with the HP ProLiant WS460c Gen 8 Graphics server blade.

THE HP BLADESYSTEM C7000 PLATINUM ENCLOSURE

The HP Bladesystem c7000 Platinum Enclosure is the newest generation HP bladed enclosure which is ideal for large data center applications. The system provides end to end native 40Gb Ethernet capability and can accommodate up to 16 server or storage blades. The enclosure is available in different pre-configured models that offer choices such as number of fans, chassis I/O, and power supplies.

For more details, visit the HP Website.

THE HP PROLIANT WS460C GEN 8 SERVER BLADE

The HP Proliant WS460c Gen 8 Graphics server blade features dual Intel Xeon E5-2600v2 processors. Each blade can accommodate up to (16) DDR3-1333 DIMMs and (2) SFF SAS/SATA/SDD hot plug drives. Packaged with the blade is a redundant Onboard Administrator with both LAN and serial access. There is an expansion blade available for I/O card expansion which can be integrated to provide two PCI Express x 16 slots.

For more details, visit the HP Website.

THE SHARPMEDIA_PCIE-8120 HARDWARE INSTALLATION

Installation of the SharpMedia PCIe-8120 accelerator in the c7000 requires the WS460 blade to be connected mechanically and electrically to the expansion blade. Once verified, remove the expansion blade lid by depressing the top eject button and unscrew the (3) screws located on the side towards the middle of the blade and in front. Once the lid is off, disconnect the expansion blade interface cable and pull out the card stabilizer guide through the front of the blade. Remove the riser card and install. For location details please see photos below. Please note, if installing the SharpMedia PCIe-8120 configuration that requires an external power connection, please purchase a GPU power extension cable at a local electronics store as the default power cabling is too short to reach the board power connector.
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 Artesyn Basic Blade Services (BBS) package (`pcie8120-<version>.zip`)
- Unzip and install Octasic software package (`octasic-sdk-<version>.zip`)

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

SYSTEM OPERATION AND THERMAL OPTIMIZATION

Based on our thermal stress test results, the c7000, WS460c and expansion blade combination will run the SharpMedia PCIE-8120 without thermal issues. When system ambient temperatures are 20C, card temperatures will vary between 20-30C. This is primarily due to separation between the server and expansion blades. The enclosure fan placement allows the system to cool the server and expansion blades in different zones. There are minimal changes in thermal activity in the expansion blade when there is a neighboring CPU-stressed server blade. Inside the expansion blade, the card air outlet temperatures are anywhere between 7-10C lower than card air inlet temperatures.

With regards to card placement, we found the slot furthest away from the server board is the coolest (top slot). The sensors on the card in the top slot read roughly 5C lower temperature than the sensor on the card found on the bottom slot. If another server blade is populated closest to the card on the top slot, it is safe to assume temperatures between the cards will be closer.

If you have any questions or issues installing the SharpMedia PCIE-8120 in the HP c7000 and WS460c, please contact your local Artesyn Field Application Engineer (FAE).