

Application Note

080

Installing a DXM-A PCoIP hardware accelerator card in a 12G blade

This application note describes how to install an Amulet Hotkey DXM-A PCoIP hardware accelerator card in a Dell 12G blade server (M520 or M620). It also describes how to install a DXM-A card *and* a DXM-G GPU add-in card in a blade. Finally, it summarizes how to install the ESXi and VM drivers required by the DXM-A.

Installation options

Various DXM-A card configurations are supported, depending on the blade type and the customer requirements.

- **Single DXM-A card:** The card can be installed in fabric B or fabric C; see [page 5](#).
- **DXM-A card plus DXM-G card:** You must install an interconnect PCB to link the DXM-A card and DXM-G card; see [page 6](#).

Note: You can only install a DXM-A with a single slot form factor DXM-G card.



*Single DXM-A card
in M520 fabric B*



*Single DXM-A card
in M520 fabric C*



*DXM-A and DXM-G in DXM520 in
fabrics B and C*

Prerequisites

This application note assumes that:

- The operating system has already been installed on the blade.
- The correct DIMMs are already installed on the blade. Please contact Amulet Hotkey Technical Support if you need guidance on this.

Applies to M620 blades only. If the DXM-A card is installed into fabric B, you must replace all existing DIMMs with low profile DIMMs.

Prepare the blade

Important: Always use appropriate anti-static handling procedures before handling a DXM-A card or a blade.

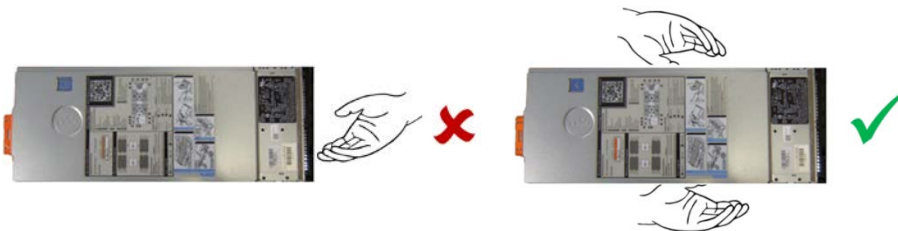
Before you install the DXM-A offload card, you must first uninstall the hardware accelerator ESXi driver from Teradici (if already installed). Then you must remove the air deflector, the iDRAC PCB, the existing Dell mezzanine card, and the existing mezzanine card holder.

1. Uninstall the existing hardware accelerator ESXi driver from the blade. Briefly, you need to:
 - a. Shut down all virtual machines hosted by the ESXi server.
 - b. Put the ESXi server into Maintenance Mode.
 - c. Connect to the ESXi server using an SSH client such as PuTTY.
 - d. Run a command to identify the Teradici components that must be uninstalled.
 - e. Run a command to uninstall the driver components.
 - f. Restart the ESXi server and exit it from Maintenance Mode.

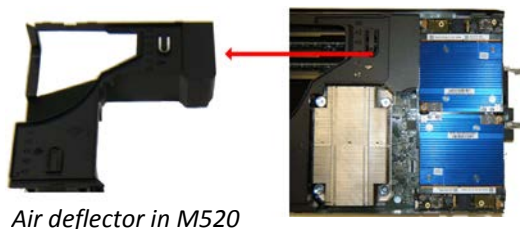
For full details about these steps, see the 'Uninstalling the Hardware Accelerator ESXi Driver' section in the *Teradici PCoIP® Hardware Accelerator (APEX 2800) Administrator's Guide*. This guide is available to registered users from the Teradici Support Center.

2. Shut down the blade and remove it from the chassis.

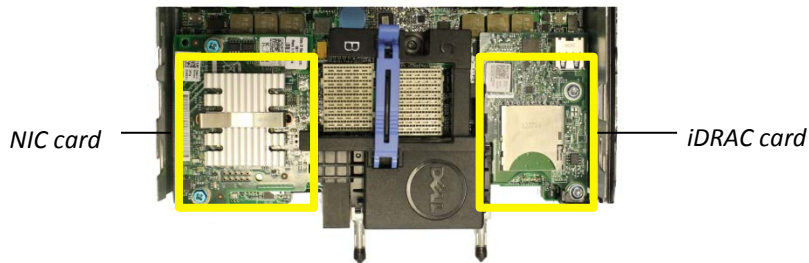
Note: Never carry the blade by its handle:



3. Press the blue button and carefully slide off the blade lid.
4. *Applies to M520 only.* Remove the air deflector (also called a cooling shroud). You will replace it later.

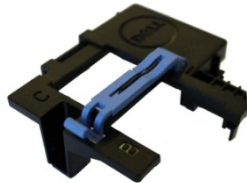


5. Remove the following components:
 - a. Remove any mezzanine cards already present.
Note: If a Dell mezzanine card is being used, remember to reinstall it after the DXMA.
 - b. (M620s only) Unscrew and *gently* remove the network interface card (NIC) from the system board.
Important! *Do not pull on the NIC heat sink.*
 - c. Unscrew and *gently* remove the iDRAC card from the system board; there will some resistance as the PCB detaches from the connectors underneath. Then remove the associated plastic SD card indicator.



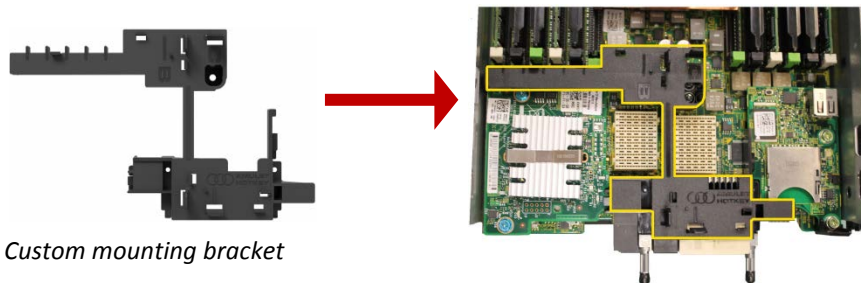
Retain the screws, iDRAC and NIC cards, and SD card indicator. You will re-install these items later.

6. Install the custom mounting bracket.
 - a. Temporarily remove the plastic orange pin protector (if present).
 - b. Remove the Dell mezzanine card mounting bracket. Note that the bracket is tightly fitted.
 Remove and retain the screw holding the bracket in place; you will re-use the screw when you install the replacement bracket.



Dell mounting bracket

- c. Install the custom mezzanine card mounting bracket supplied with the DXM-A card.
 Do not screw the bracket in at this stage.



Custom mounting bracket

7. Reinstall the iDRAC card. The card lugs fit into corresponding slots on the custom mounting bracket. Make sure the plastic SD card indicator is back in place before you tighten the screws.

Tip: Slot the inner edges of these cards into clips on the mounting bracket before slotting the cards into the connectors on the system board.

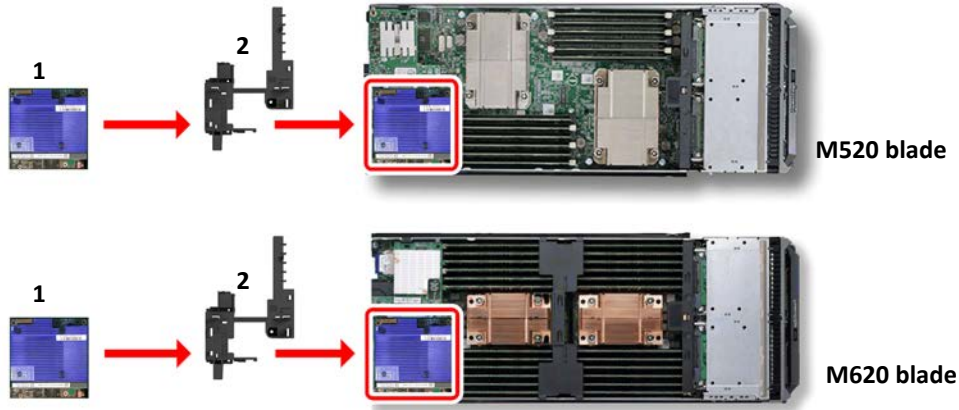
8. (M620s only) Reinstall the NIC card. As with the iDRAC card, the card slots into the custom mounting bracket before slotting into connectors on the system board.

Important! *Do not push down on the NIC heat sink.*

You can now install a single DXM-A card ([page 5](#)) or a DXM-A and DXM-G ([page 6](#)).

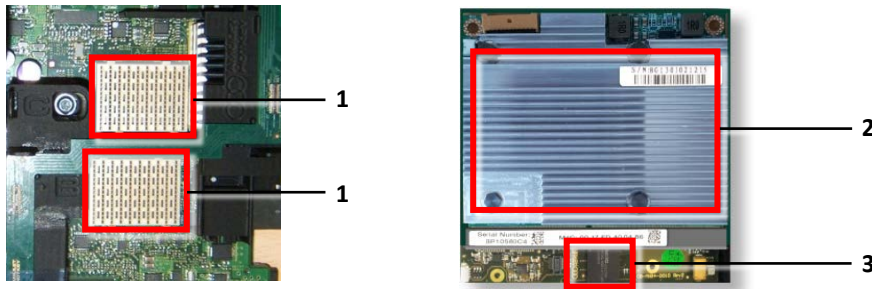
Install a single DXM-A card

The installation procedure is summarized below:



DXM-A installation for M520 and M620 blades. In these examples, the DXM-A is installed into fabric C. **1** DXM-A. **2** Custom mounting bracket.

1. Remove the black protective insert from the DXM-A card connector.
2. Install the DXM-A card.
 - a. Remove the black plastic pin protector from the DXM-A card.
 - b. Carefully insert the DXM-A card into the mezzanine connector, aligning the guide lugs, and clip the card into the custom mounting bracket.



Insert the DXM-A card into either of the mezzanine connectors (**1**)

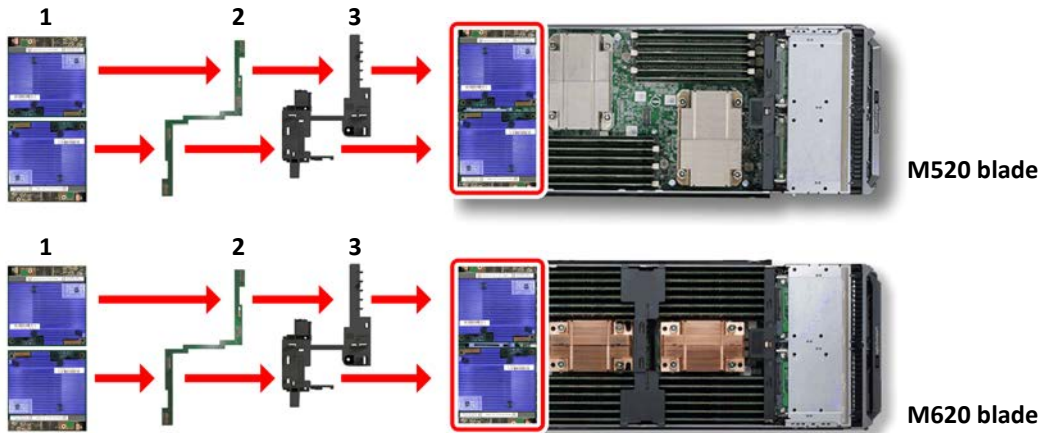
Important! Do not push down on the heat sink (**2**). Also, take great care to avoid damaging this chip (**3**) when inserting or removing the DXM-A card.

3. Reinstall the air deflector (if not already installed).
4. Reinstall the Dell mezzanine card (if being used).
5. Put the lid back on the blade.
6. Re-insert the blade into the chassis and power up.

Now install the ESXi driver and VM drivers; see [page 8](#).

Install DXM-A card and DXM-G card in a single blade

The installation procedure is summarized below:

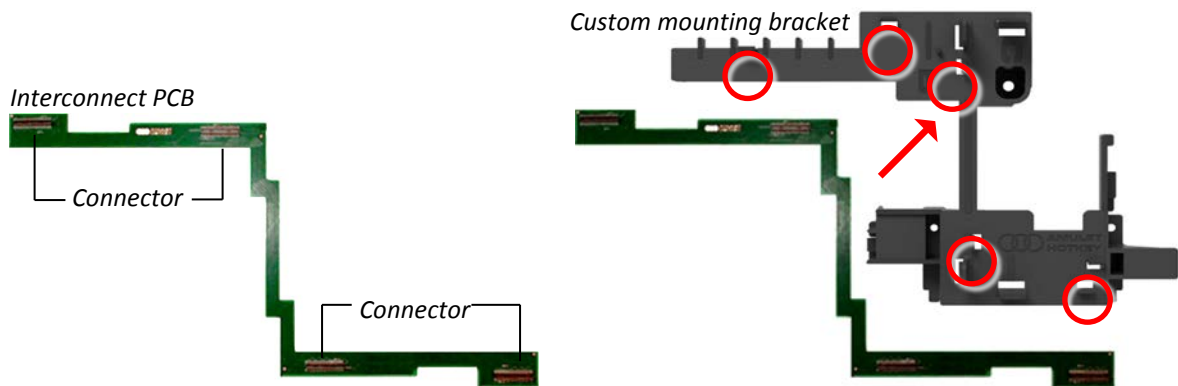


DXM-A and DXM-G card installation for M520 and M620 blades. Here, the DXM-A and DXM-G cards (1) are linked via an interconnect PCB (2), which itself is clipped on a custom mounting bracket (3).

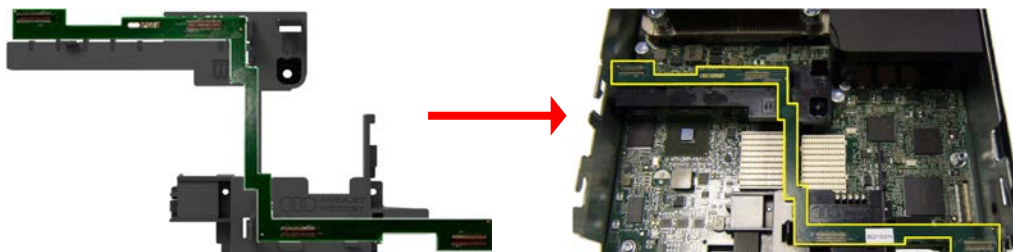
1. Install the interconnect PCB

Before installing the DXM-A and DXM-G, you must install the z-shaped interconnect PCB (also called a Zorro board). Clip the interconnect PCB onto the custom mounting bracket *with the connectors facing upward*.

Note: Contact your Amulet Hotkey representative if you do not have an interconnect PCB.



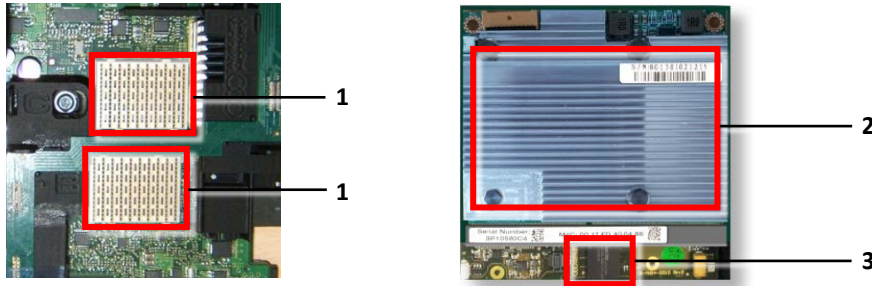
The interconnect PCB is held in place by integrated clips on the mounting bracket (circled). Systematically press the interconnect PCB down into each clip.



2. Install the DXM-A card and DXM-G card

Each card clips into the custom mounting bracket and connects to the interconnect PCB.

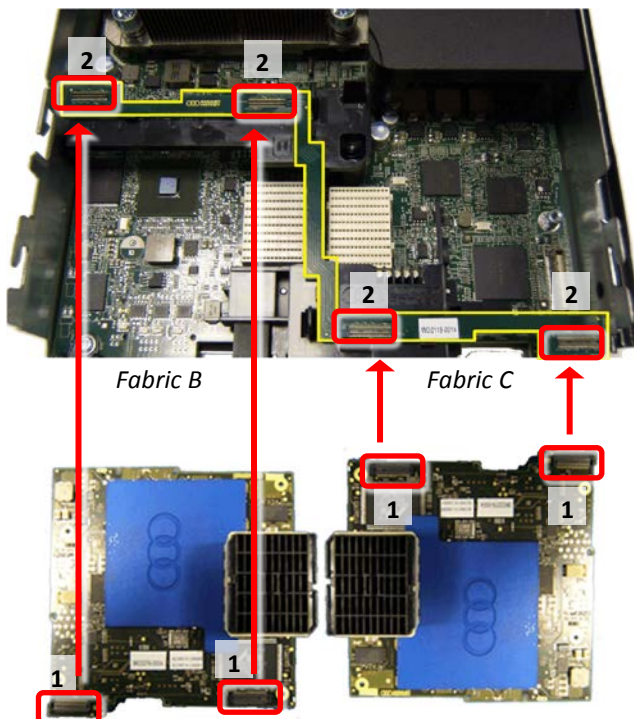
1. Remove the black plastic pin protector from the DXM-A and DXM-G cards.
2. Carefully insert each card into a mezzanine connector, aligning the guide lugs, and clip the cards into the custom mounting bracket.



Insert each card into a mezzanine connector (1)

Important! Do not push down on the heat sink (2). Also, take great care to avoid damaging this chip (3) when inserting or removing a card.

3. Connect both cards to the interconnect PCB. Each arm of the interconnect PCB has two connectors (four in total) on its top side. Make sure the connectors on the interconnect PCB are fully inserted into the corresponding connectors on the underside of each card.



Ensure that the connectors on the underside of the DXM-A and DXM-G cards (1) are fully inserted into the connectors on the top side of the interconnect PCB (2).

Tip: Squeeze together the top edge of the cards and the underside of the custom mounting bracket.

You will need to push firmly. An audible click confirms that the connectors are fully inserted. Take particular care to check the card in fabric B, which cannot be easily seen.

4. Reinstall the air deflector (if not already installed).
5. Put the lid back on the blade
6. Re-insert the blade into the chassis and power up.

Now install the ESXi driver and VM drivers; see the next section.

Install the new ESXi driver and VM driver

After installing the DXM-A in a blade, you must install the appropriate hardware accelerator ESXi driver and VM driver. For full details about installing these drivers, see the *Teradici PCoIP® Hardware Accelerator (APEX 2800) Administrator's Guide*, available to registered users from the Teradici Support Center.

Obtain the Hardware Accelerator drivers package

This driver package includes two components: the ESXi driver and the virtual machine driver.

Follow these steps:

1. Download the appropriate PCoIP Hardware Accelerator drivers package from the Teradici Technical Support website. Choose appropriate package for your version of ESXi.
2. Extract the package contents to a convenient network PC.

Install the new ESXi driver

Follow these steps:

1. Shut down all virtual machines hosted by the patching blade or migrate them to another server.
2. In the VMware vSphere client, locate the ESXi server in the Inventory and put it in Maintenance Mode.
3. Enable remote login on the ESXi server on your blade.
See your VMware documentation for details. This step is also described in the *Teradici PCoIP® Hardware Accelerator (APEX 2800) Administrator's Guide*.
4. Use WinSCP (Windows Secure Copy) to securely copy the ESXi drivers package to the ESXi server from the network PC.
5. Install the ESXi driver package using an SSH client such as PuTTY.

Verify that the ESXi server is in Maintenance Mode. Then navigate to the /tmp folder and install the driver package. The command syntax is:

```
esxcli software vib install -d /tmp/<drivers package file>
```

For example, to install the drivers package for ESXi 5.5, run:

```
esxcli software vib install -d /tmp/apex2800-2.3.5-rel-esxi-5.5.0-033571.zip
```


6. Wait for the installation result output to be displayed.
7. Reboot the ESXi server.
8. Using VMware vSphere, exit the ESXi server from Maintenance Mode.
9. Using an SSH client such as PuTTY, verify that the ESXi driver was installed successfully. To output the driver details, run:

```
/opt/teradici/pcyip-ctrl -I
```

The output lists the ESXi driver version number under **APEX2800 Driver Information > SVN Revision**.
For more information about the command output, see the 'Viewing the Hardware Accelerator Status' section in the *Teradici PCoIP® Hardware Accelerator (APEX 2800) Administrator's Guide*.
10. Verify the Global Policies settings on your View Connection Server. Specifically, using VMware View Administrator you must verify that:
 - The 'PCoIP hardware acceleration' policy is set to Allow if any policies inherit from it.
 - The option for enabling and disabling PCoIP hardware acceleration is set to Allow in any custom policies.

Install the virtual machine driver on each virtual machine (VM)

1. Power up the VM and copy the virtual machine driver installer to the virtual desktop.
2. Using the VMware vSphere client, open a console window to the VM and run the installer. If required, the installer supports command line silent installations.
Note: You cannot run the installer from within a PCoIP session.
3. Verify that the virtual machine driver was installed successfully.

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