

Application Note

085

AN 085 Adjusting the fan speed on a single slot AMD S4000X GPU

Background

This application note describes how to set the minimum fan speed recommended by Amulet Hotkey for the AMD S4000X GPU on a [DXM4-4](#) PCoIP host card.

The Amulet Hotkey DXM4-4 PCoIP host card incorporates a *single slot form factor* S4000X GPU. Because the DXM4-4 only uses up one valuable mezzanine card slot in an M420, M520 or M620 blade, it is ideal for space constrained installations.

However, the single slot form factor of the DXM4-4 requires that the S4000X GPU is fitted with a standard size heat sink. This means that cooling considerations are paramount, particularly during intensive GPU operations. If the S4000X GPU reaches its maximum thermal threshold (108 °C), the GPU is automatically downclocked to prevent overheating which in turn may adversely affect performance.

To prevent reduced performance caused by the S4000X GPU downclocking itself, you need to change the thermal profile by raising the default minimum fan speed to the minimum speed recommended by Amulet Hotkey.

Note: Amulet Hotkey also produce the [DXM4-5](#) PCoIP host card. Unlike the DXM4-4, the DXM4-5 incorporates a *dual slot form factor* AMD S4000X GPU, which features a large heat sink that occupies both mezzanine slots in an M520 or M620 blade.

Set the recommended minimum fan speed

You configure the GPU fan speed as a percentage, where 30% is the default fan speed and 100% is the maximum fan speed.

Amulet Hotkey recommends that you set the minimum fan speed to 55%.

(This recommendation assumes an ambient temperature of 20 °C.)

To set the S4000X fan speed and change the thermal profile, you use the Dell Chassis Management Console (CMC) command line SSH console, also known as RACADM.

To set the minimum fan speed, enter this command:

```
racadm config -g cfgThermal -o cfgThermalMFSPercent <percentage>
```

Where <percentage> is a value between 30 (the default fan speed) and 100. We recommend that you set this value to **55**.

Set <percentage> to 0 to revert to the default fan speed setting and resume normal operation.

To confirm the setting, enter this command:

```
racadm getconfig -g cfgThermal
```

Note: The <percentage> value that you specify will persist across CMC firmware updates but will need to be reset if the CMC is replaced.

More Information

For more information about RACADM commands, see the Dell *RACADM Command Line Reference Guide for iDRAC7 1.50.50 and CMC 4.5*.

Amulet Hotkey can provide this manual. In addition, at September 2014 this manual was available at:

<http://www.dell.com/support/home/us/en/04/product-support/product/poweredge-m1000e/manuals>

For more information on how air flow occurs in a Dell M1000e enclosure, review the section 'Heat Dissipation' in the Dell *PowerEdge M1000e Technical Guide*.

Amulet Hotkey can provide this manual. In addition, at September 2014 this manual was available at:

<http://www.dell.com/support/home/us/en/04/product-support/product/poweredge-m1000e/manuals>

© 2014 Amulet Hotkey Ltd. All rights reserved. Information in this document is subject to change. No part of this document may be reproduced through any means including (but not limited to) electronic or mechanical, without express written permission from Amulet Hotkey Ltd. Amulet Hotkey Ltd may have patents, patent applications, trademarks or copyrights or other intellectual property rights covering subject matter in this document. "Amulet Hotkey" and "solutions you can bank on" are registered trademarks of Amulet Hotkey Ltd. Other product names and company names listed within this document may be trademarks of their respective owners.