

SFA14K[™]

Excessive BMC Network Traffic Can Trigger Spontaneous Controller Reboots

Issue Description

All SFA storage controllers incorporate a specialized service processor known as a baseboard management controller (BMC). The BMC monitors the physical state of the storage controller hardware and communicates with a system administrator through an external port using Intelligent Platform Management Interface (IPMI) commands. The BMC performs its functions independently of the controller CPU, BIOS, or SFA OS, and it can initiate hardware shutdown or restart autonomously or under remote administrator control.

DDN Engineering has identified a problem with the BMC firmware on the SFA14K family of storage controllers. Certain types of network traffic on the Ethernet port connected to the BMC management port on the SFA14K can cause the BMC to reboot. This causes the SFA14K controller to abruptly reset in such a way that the data in cache is not saved.

In the interest of data integrity, DDN recommends that the BMC port be disabled unless required for remote operation.

Affected Systems

All SFA14K, SFA14KX, SFA14KE, and SFA14KXE storage array controllers are affected by this issue.

Resolution

DDN is currently testing new BMC firmware that is expected to resolve this issue. This firmware is

scheduled for release with SFA OS 3.1.

Workaround

Until the BMC fix becomes available, the workaround is to disable the BMC network interface — also known as IMPI — on both controllers. This should be done using the Linux `ipmitool` utility. You can download this open-source utility at no charge from [SourceForge.net](https://sourceforge.net).

ALERT! *Do not attempt to use the Web UI* to disable the BMC network interface/IMPI.

Although the Web UI has a checkbox to disable the BMC network interface, the Web UI will not allow the static IP address for the BMC to be set to 0.0.0.0. Consequently, any attempt to disable IMPI using the Web UI checkbox will fail.

Procedure

The following procedure disables the BMC network interface/IPMI using `ipmitool` running on a separate Linux system that is connected to the same network as the SFA controller BMC. Follow this procedure on **both** SFA controllers.

NOTE Do not run `ipmitool` directly on the SFA controller.

Step 1. At the SFA OS RAID command line, get the IP address of the SFA controller's BMC by running the CLUI command:

```
show enclosure * all
```

In the command output, find the block of attributes belonging to each controller (identified by the value **CONTROLLER** in the enclosure **Type** field). Then scan down to the **BMC IP Address** field for that enclosure index.

Example command output is shown below.

```
*****
* Enclosure(s) *
*****

Index: 0
Enclosure: 0x50000000
Type: CONTROLLER
Logical ID: 0x0001ff0b017e0000
Vendor ID: DDN
Product ID: SFA14000
Revision: A03
BIOS version: 020F
BMC version: 00.48
Firmware version: 3.0.0.0
FPGA/CPLD version: 02.01
PSoC version: 02.18
BMC IP address: 10.36.26.239
.
.
.
```

Step 2. On a separate Linux computer that is connected to the same network as the controller BMC, ensure that `ipmitool` is installed.

Step 3. At the Linux command line, enter the following `ipmitool` command to set the BMC to static IP addressing mode.

```
ipmitool -I lan -U sfabmc -P <BMC_password> -H <BMC_IP_address>  
lan set 1 ipsrc static
```

Note that `ipmitool` requires you to supply the BMC user ID and password with every command. On the SFA14K, the BMC user ID is `sfabmc` and the default BMC password is `W01fDdn14K`.

Step 4. Enter the following line command to set the BMC IP address to 0.0.0.0:

```
ipmitool -I lan -U sfabmc -P <BMC_password> -H <BMC_IP_address>  
lan set 1 ipaddr 0.0.0.0
```

The BMC network interface is now disabled. However, output from `show encl all` commands will not change until you reboot the controller.

Step 5. Repeat Step 1 through Step 4 on the second controller in the storage array.

Contacting DDN Technical Support

Please contact DDN Technical Support at any time if you have questions or require assistance. Support can be reached by phone, by email, or on the web as listed below.

Web

*DDN Community Support Portal
Portal Assistance*

<https://community.ddn.com/login>
webportal.support@ddn.com

Telephone

DDN Support Worldwide Directory

<http://www.ddn.com/support/contact-support>

Email

Support Email

support@ddn.com

Bulletins

Support Bulletins

End-of-Life Notices

Bulletin Subscription Requests

<http://www.ddn.com/support/technical-support-bulletins>

<http://www.ddn.com/support/end-of-life-notices>

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