TECHNICAL NOTE
STORMSHIELD NETWORK SECURITY

SN1100 - UPDATING THE BIOS TO VERSION R1.01

Product concerned: SN1100

Document last updated: November 6, 2023

Reference: sns-en-SN1100_updating_BIOS_technical_note

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Getting started

This document describes the procedure of updating BIOS on an SN1100 model firewall from version R1.00 to version R1.01.

INFORMATION
The BIOS R1.0.1 version is essential to guarantee compatibility with the network module **NA-EX-CARD-8x2_5G-C**.

Required equipment

- A monitor fitted with an HDMI port and an HDMI/HDMI cable,
- A USB keyboard,
- A blank USB flash drive formatted to FAT32,
- An SN1100 model firewall running in BIOS version R1.00.

Preparing the USB flash drive

To update BIOS, you must download the most recent version of the AMI Firmware Update Tool (AFU) available at the following link:

https://www.ami.com/static-downloads/Aptio_V_AMI_Firmware_Update_Utility.zip

Copying the update utility to the USB flash drive

1. Unzip the archive *Aptio_V_AMI_Firmware_Update_Utility.zip*.
   Files will be unzipped to a folder named *Aptio_V_AMI_Firmware_Update_Utility*.
2. Unzip the archive *BgtEfi64.zip* found in the sub-folder *Aptio_V_AMI_Firmware_Update_Utility/bgt/bgtefi/64/5.06*.
3. Copy the file *BgtEfi64.efi* found in the sub-folder *Aptio_V_AMI_Firmware_Update_Utility/bgt/bgtefi/64/5.06/BgtEfi64* **to the root folder** of your USB flash drive.

Downloading BIOS version R1.01

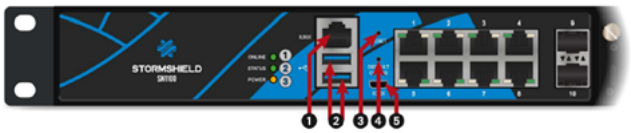
1. Download the file *SN1100_BIOS_R101.zip* from your Mystormshield personal area (**Downloads** > **STORMSHIELD NETWORK SECURITY** > **TOOLS** > **STORMSHIELD NETWORK SECURITY-TOOLS** > **SN1100 BIOS R101**).
2. Verify the integrity of the downloaded file using its SHA256 hash:
   7d1a93402dd91de94d5088c3f9d5e69655ea75ed306d403dd404acea5fc21f09.
3. Unzip the archive *SN1100_BIOS_R101.zip* to the **root folder** of your USB flash drive.
4. Verify the root folder of your USB flash drive. You should find the following files and folders in it:

5. Verify the integrity of the binary file *SN1100_R101_BIOS_Guard.bin* using its SHA256 hash: 04d4044a1b372ea3226645cb2802062689fdf64628f1e8ca976597919999a98e.
6. Verify as well the integrity of the binary file *FWUpdate_Corporate_prod.bin* using its SHA 256 hash: a2974354af3f3958319ff761e5366b23c4a74c76bec7a02d2c3009c07713e497.

Your USB flash drive is ready to update BIOS to version R1.01.

Updating BIOS (SN1100)

Most of the connectors on these firewall models are located on the front panel, except for the HDMI micro port on the underside of the appliance.



1 : RJ45 serial port in console mode
2 : USB 3.0 port
3 : *Reset* button
4 : Button to reset the appliance to its factory settings (*defaultconfig*).
5 : Micro USB serial port in console mode

1 : HDMI port: for plugging in the monitor
2 : USB 3.0 port
3 : On/Off button
4 : Mains socket
5 : Alarm OFF button

Connecting devices to the firewall

1. Plug the monitor into the HDMI port on the rear panel of the firewall.
2. Plug the keyboard into a USB port on the firewall.
3. Insert the USB drive into the second USB port.

Checking the BIOS version on the firewall

1. Connect to the firewall in console or SSH using a Putty program.
2. Authenticate using the *admin* account.

3. Enter the command: `dmidecode -s bios-version`
   The firewall will show the BIOS version, which must be R1.0.0.

Updating BIOS on the firewall

IMPORTANT
The update process is fully automatic and lasts around five minutes.
Once the process is run, it must never be interrupted and the firewall must not be disconnected from the power supply. If this occurs, your firewall will be completely unable to run.
If your firewall has redundant power supply modules, ensure that you have plugged both modules into the electrical grid.

1. Restart the firewall by using the `reboot` command.
   The firewall will start up automatically on the USB drive.
2. In the command prompt, run the executable file `Flash_R101.nsh`:

```
fs1:\> Flash_R101.nsh
Flash_R101.nsh> BgtEfix64.efi SN1100_R101_BIOS_Guard.BIN /BIOSALL
+-------------------------------------------------------------------------------+
|            AMI BIOS Guard Firmware Update Tool v5.06.02.0003                  |
|      Copyright (c) 1985-2021, American Megatrends International LLC.         |
|         All rights reserved. Subject to AMI licensing agreement.              |
+-------------------------------------------------------------------------------+
 NVRAM ............................. (100%)
 NVRAM_BACKUP ...................... (100%)
 FV_MAIN_WRAPPER_00 ................ ( 20%)
 FV_MAIN_WRAPPER_01 ................ ( 40%)
 FV_MAIN_WRAPPER_02 ................ ( 60%)
 FV_MAIN_WRAPPER_03 ................ ( 80%)
 FV_MAIN_WRAPPER_04 ................ (100%)
 FV_NETWORK_WRAPPER_00 ............. ( 25%)
 FV_NETWORK_WRAPPER_01 ............. ( 50%)
 FV_NETWORK_WRAPPER_02 ............. ( 75%)
 FV_NETWORK_WRAPPER_03 ............. (100%)
 FV_DATA_00 ........................ ( 50%)
 FV_DATA_01 ........................ (100%)
 FV_BB_AFTER_MEMORY ................ (100%)
 FV_FSP_S .......................... (100%)
 FV_FSP ............................ (100%)
 FV_BB ............................. (100%)
```

3. When the update process ends, run the command `reset -s` to shut down the product.
4. Disconnect your firewall from the electrical grid (or both power supplies if your firewall has redundant power supply modules).

Updating the Intel® Management Engine firmware

Following the BIOS update, the Intel® Management Engine firmware must also be upgraded.

1. Plug in the power cord(s). The firewall will start up automatically on the USB drive.
2. In the command prompt, run the executable file Flash_ME.nsh:

```
fs1:\> Flash_ME.nsh
Intel (R) Firmware Update Utility Version: 14.1.70.2239
Copyright (C) 2005 - 2023, Intel Corporation. All rights reserved.

Checking firmware parameters...

Warning: Do not exit the process or power off the machine before the firmware update process ends.
Sending the update image to FW for verification:  [ COMPLETE ]



FW Update:  [ 100% (/)] Do not Interrupt
FW Update completed successfully and a reboot will run the new FW.
```

3. Enter the command "reset -s" once the update is complete.

4. Disconnect your firewall from the electrical grid (or both power supplies if your firewall has redundant power supply modules).
5. Unplug the USB drive from your firewall.

Checking the BIOS version on the firewall after an update

1. Plug the power cord(s) into the SN1100 firewall.
   Your firewall will automatically restart.
2. When the system has fully restarted after the BIOS update (all 3 LEDs, *Online*, *Status* and *Power* are on), repeat the procedure of Checking the BIOS version on the firewall.
   This time, the version indicated should be R1.01.

Updating the PCR

On firewalls with a TPM initialized in BIOS version R1.00, the Platform Configuration Register (PCR) must be updated.

When the system has fully restarted after the BIOS update (all 3 LEDs, *Online*, *Status* and *Power* are on):

1. Connect to the firewall in SSH or console,
2. Enter the command:

```
tpmctl -v -s -p <tpm_password>
```

Further reading

Additional information and answers to some of your questions may be found in the Stormshield knowledge base (authentication required).

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