



UEFI Menu

Table of contents

Accessing the UEFI Menu

Front Page

Device Manager

Secure Boot Configuration

Network Device List

System Configuration

RAM Disk Configuration

iSCSI Configuration

Tls Auth Configuration

Unified Extensible Firmware Interface (UEFI) is low-level firmware that is part of the NVIDIA® BlueField® bootloader stack. UEFI acts as an interface between the BlueField's Arm-trusted firmware (ATF) bootloader and the OS.

Info

The UEFI specification is available at [UEFI.org](https://uefi.org).

UEFI provides a menu which supports certain configuration options. This section lists and describes configurations supported from the UEFI Device Manager menu.

Info

For more complete information beyond the Device Manager menu option, please refer to the [NVIDIA Networking Server-Side Documentation of Flexboot & UEFI > User Manual > User Interface > HII \(UEFI\) System Settings Configuration Options](#).

Info

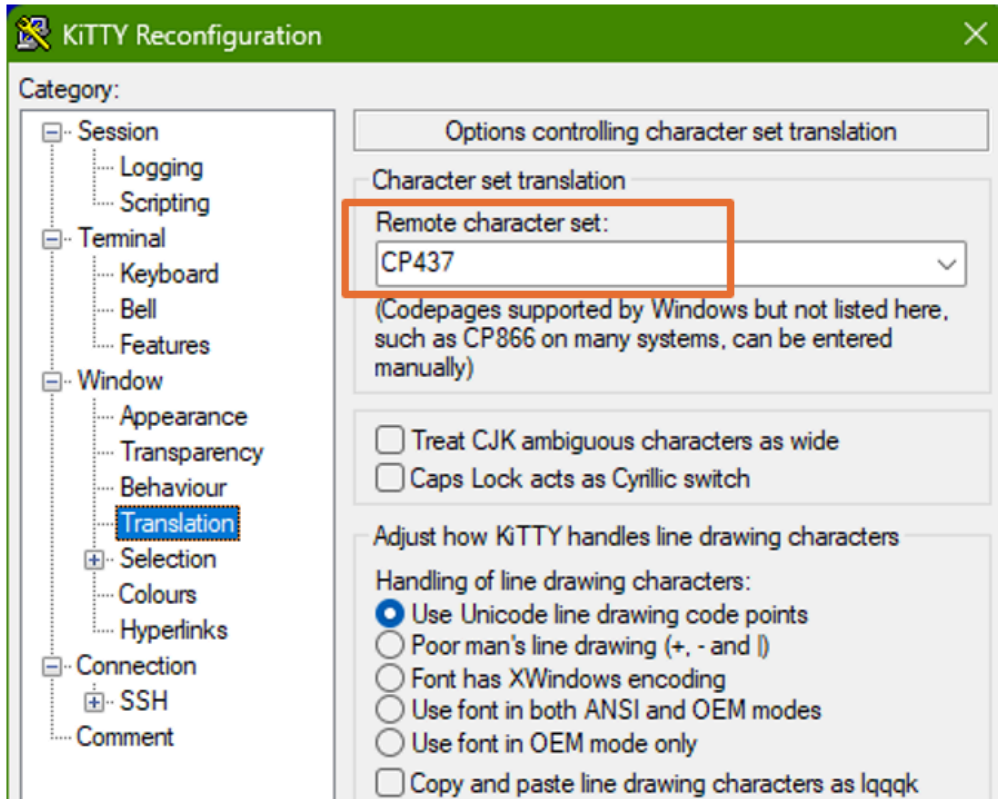
Most of these menu items are also configurable via [Redfish](#) (when enabled).

Accessing the UEFI Menu

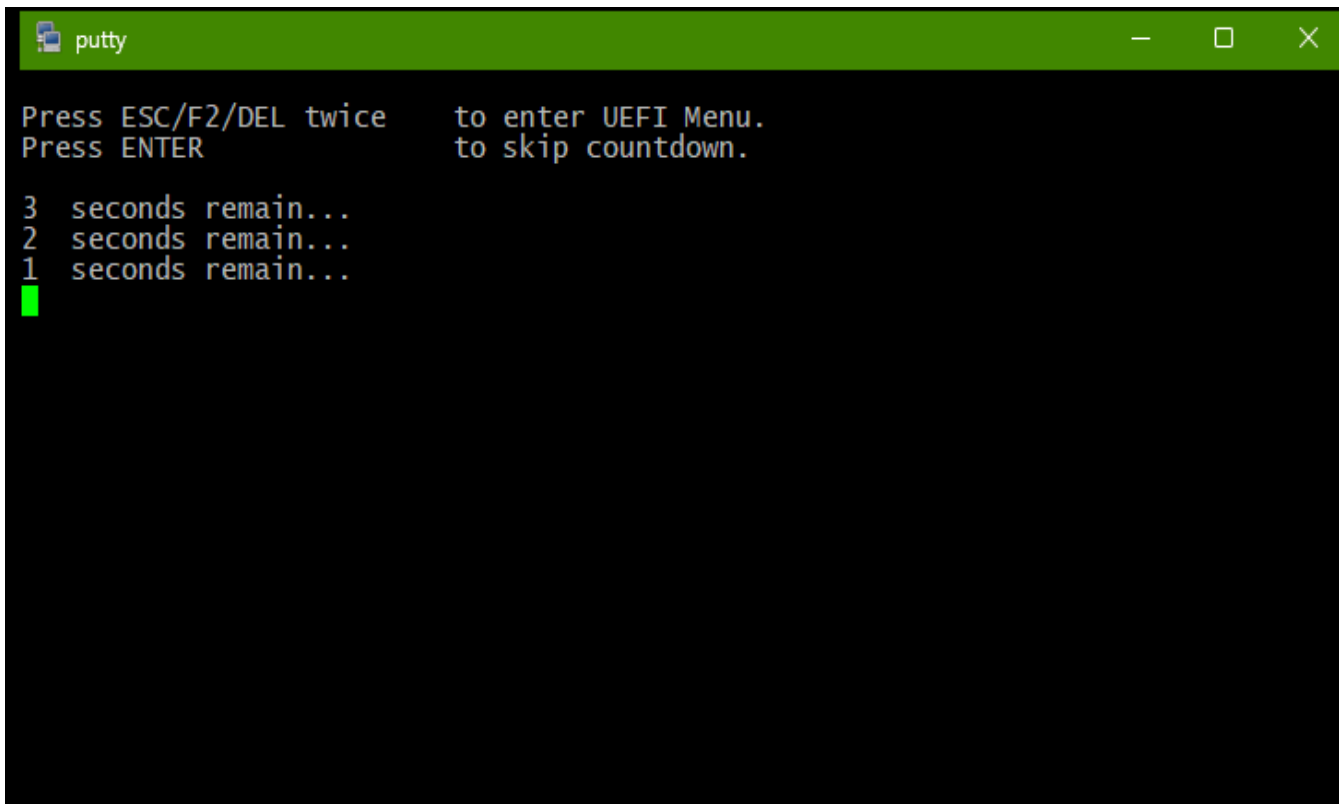
To access the UEFI menu, users must have a connection to the BlueField console either through a UART serial port or the virtual RShim console device. The console should be configured to 115200 8N1. The UEFI's UI window size is 80 columns and 25 rows. Configure your terminal size accordingly.

UEFI's UI uses a legacy character encoding, CP437 (code page 437), to ensure most compatibility. Configure your terminal to use this code page to show the table borders properly.

The following is an example for how to configure this properly in putty:



To enter the UEFI menu, hit the Esc key twice when prompted during the normal boot sequence:

A screenshot of a Putty terminal window with a green title bar. The terminal text reads: "Press ESC/F2/DEL twice to enter UEFI Menu. Press ENTER to skip countdown." followed by a 3-second countdown: "3 seconds remain...", "2 seconds remain...", "1 seconds remain...". A green cursor is visible on the line "1 seconds remain...".

```
putty
Press ESC/F2/DEL twice to enter UEFI Menu.
Press ENTER to skip countdown.
3 seconds remain...
2 seconds remain...
1 seconds remain...
█
```

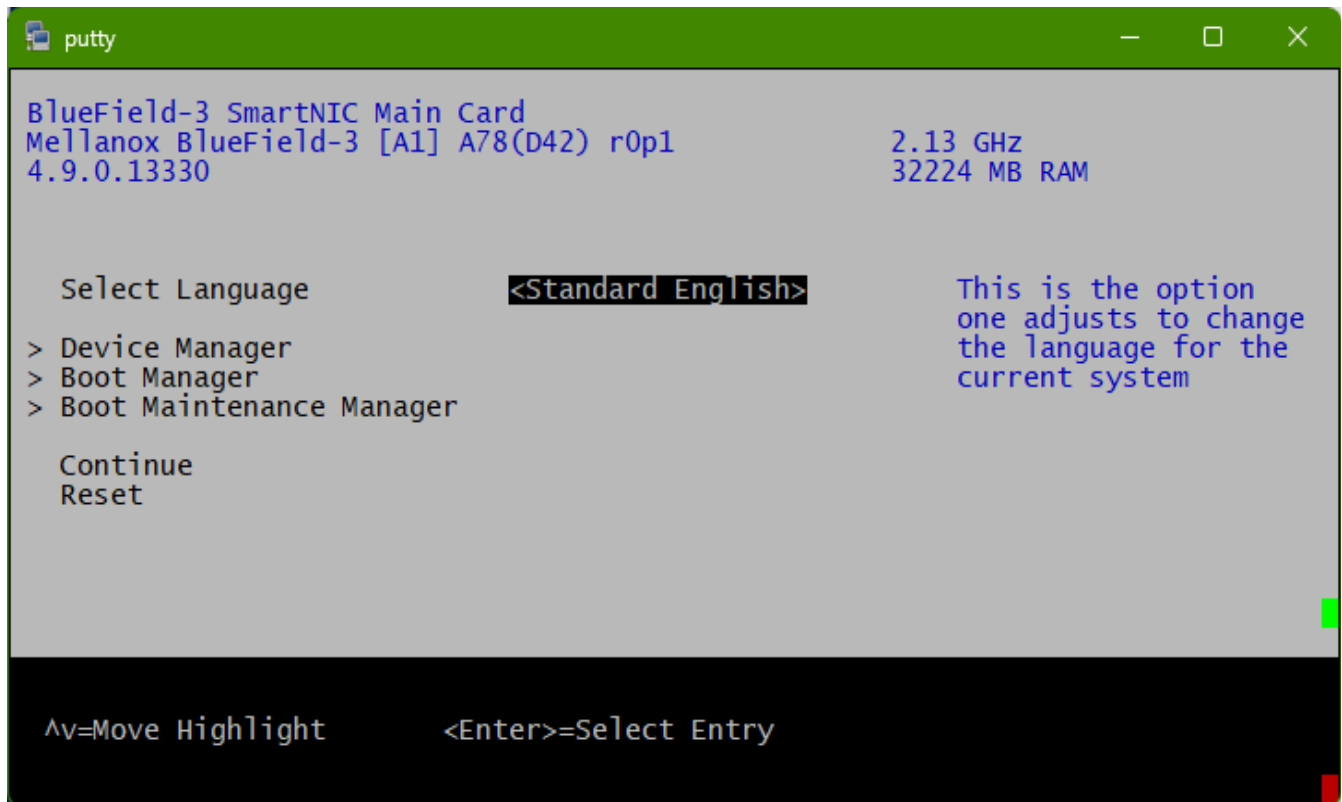
Note

All BlueField platforms ship with a default UEFI menu password, `bluefield`. If the password is set to `bluefield` when you enter the UEFI menu, users are prompted to change it.

Tip

NVIDIA strongly recommends all DPUs have their UEFI password set to a non-default value. This can be done using the UEFI menu or Redfish.

Front Page

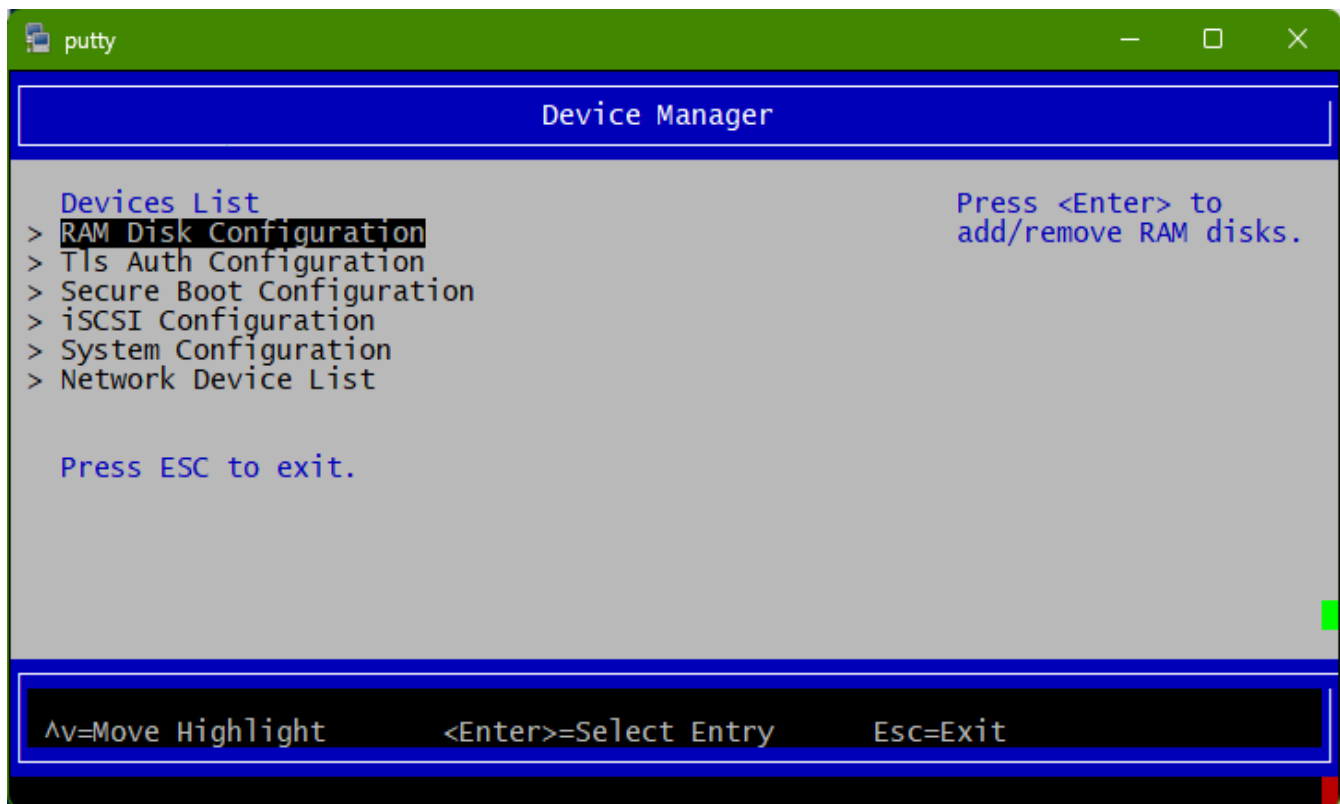


There are three main menu items in the front page:

- Device Manager
- Boot Manager
- Boot Maintenance Manager

The rest of this page focuses on Device Manager.

Device Manager

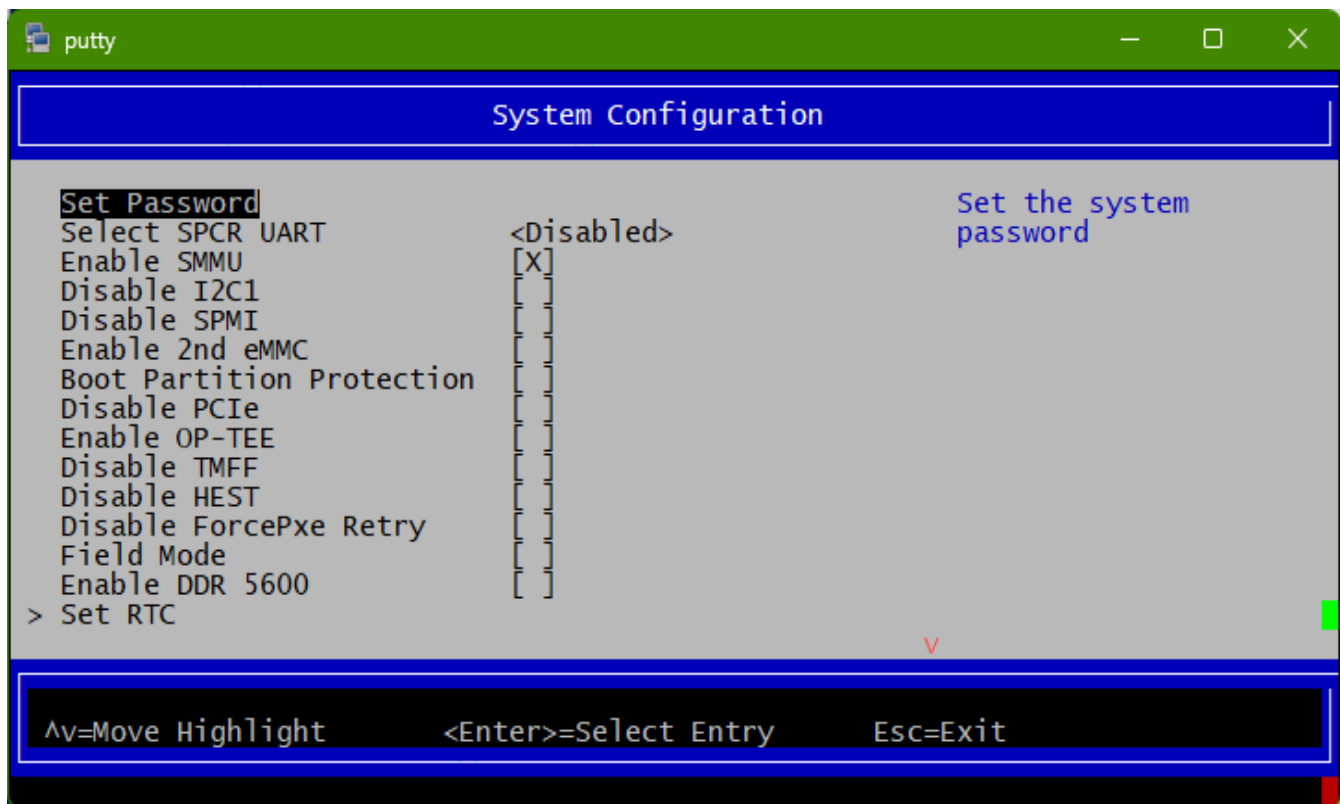


System Configuration

Lists different system configuration options.


Note




Some configuration options may require a system reset to take effect.









Info



To change the configuration of any of these BIOS attributes using Redfish, refer to section "[Changing BIOS Attributes Value](#)" in the BMC Software User Manual.

Menu Option	Description
Set Password	<p>Set the system password. Set the UEFI password. All BlueField Platforms ship with a default UEFI menu password, <code>bluefield</code>. If the password is set to <code>bluefield</code> when you enter the UEFI menu, users are prompted to change it.</p> <p>Tip NVIDIA strongly recommends all DPUs have their UEFI password set to a non-default value. This can be done using the UEFI menu or Redfish.</p>
Select SPCR UART	<p>Choose UART for serial port console redirection <code>[<Disabled> <UART Port 0> <UART Port 1>]</code>.</p> <p>Users may set the SPCR table (ACPI) to point to UART0, UART1, or disable the feature. The OS can reference this table to steer serial output. For example, Linux uses this table for its earlycon feature.</p> <p> Warning Leave this attribute to its default if you are not certain how to configure it, or you may destabilize your system.</p>




Menu Option	Description
Enable SMMU	<p>Enable/disable the SMMU. BlueField Platforms have an integrated SMMU on the SoC. Users may enable or disable this unit. Enabling it can make the system more secure but, with certain network flows, the enabled SMMU could cause performance issues.</p> <div data-bbox="402 478 1463 699" style="background-color: #f8d7da; padding: 10px;"> <p> Warning Leave this attribute to its default if you do not certain how to configure it.</p> </div>
Disable SPMI	<p>Enable/disable ACPI server platform management interface table. Allows users to enable/disable the ACPI SPMI table. This table instructs the OS on what interface/device to use for the IPMI SSIF.</p> <div data-bbox="402 961 1463 1182" style="background-color: #f8d7da; padding: 10px;"> <p> Warning Leave this attribute to its default if you do not certain how to configure it.</p> </div>
Enable 2nd eMMC	<p>Enable/disable the second eMMC. Some legacy BlueField systems have 2 eMMC devices. This feature has been discontinued.</p> <div data-bbox="402 1444 1463 1703" style="background-color: #f8d7da; padding: 10px;"> <p> Warning Leave this attribute to its default (disabled) if you do not certain how to configure it, or your system will not boot correctly.</p> </div>

Menu Option	Description
Boot Partition Protection	<p data-bbox="402 226 1458 422"> Enable/disable the eMMC boot partition protection. Takes effect after reboot. There are 2 logical "boot partitions" on the eMMC device used to store ATF/UEFI code. These are referred to as the primary/secondary boot partitions. Users can write-protect these partitions using this attribute. </p> <div data-bbox="402 478 1463 898" style="background-color: #ffffcc; padding: 10px;"> <p data-bbox="430 520 578 569">  Info </p> <p data-bbox="505 575 1260 848"> These are separate devices from the flash storage used by the OS (for file systems). They do not contain file systems and are only used for storing binary boot code on raw flash. Do not confuse an eMMC boot partition with an EFI System Partition (ESP) used to store boot loaders and OS images on a FAT32 file system. </p> </div> <div data-bbox="402 957 1463 1178" style="background-color: #ffffcc; padding: 10px;"> <p data-bbox="430 999 578 1047">  Info </p> <p data-bbox="505 1054 1268 1129"> If secure boot is enabled, these partitions are write-protected by default. </p> </div> <div data-bbox="402 1241 1463 1461" style="background-color: #ffffcc; padding: 10px;"> <p data-bbox="430 1283 594 1331">  Note </p> <p data-bbox="505 1337 1208 1413"> This menu option is not currently supported for BlueField-3. </p> </div>


Menu Option	Description
Disable PCIe	<p>Enable/disable PCIe root complex. Normally, UEFI enumerates the PCIe bus during the boot process and reports this information to the OS via the ACPI SSDT table. If this attribute is disabled, UEFI does not populate the SSDT with the PCIe root complex information, so the OS does not have visibility to devices on the PCIe bus.</p> <div data-bbox="402 520 1463 741" style="background-color: #ffffcc; padding: 10px;"> <p> Note This attribute is used for diagnostic purposes and should not be modified.</p> </div>
Enable OP-TEE	<p>Enable/disable support for trusted execution environment.</p> <div data-bbox="402 919 1463 1140" style="background-color: #f8d7da; padding: 10px;"> <p> Warning Do not enable this feature. More information will be provided in future releases.</p> </div>
Disable TMFF	<p>Enable/disable the BlueField-specific ACPI TMFIFO table. This can be used by some OSes to perform console/debugging over the BlueField TMFIFO interface. It can override the SPCR table.</p> <div data-bbox="402 1402 1463 1623" style="background-color: #f8d7da; padding: 10px;"> <p> Warning Leave this attribute to its default if you are not certain how to configure it.</p> </div>

Menu Option	Description
Disable HEST	<p>Disable OS error handling via HEST (hardware error source table). HEST is a mechanism for reporting hardware errors (e.g., CPU errors, memory errors, PCIe errors) to the OS. By default, this option is disabled (i.e., HEST is enabled) so the OS can handle hardware errors more gracefully by either logging them or taking corrective action. When this option is checked and HEST is disabled, the BIOS (ATF/UEFI) is immediately involved when hardware errors happen, potentially preventing undesired error propagation.</p> <div data-bbox="402 638 1463 821" style="background-color: #f8d7da; padding: 10px;"> <p> Warning Leave this attribute to default if you are not certain.</p> </div>
Disable ForcePxe Retry	<p>If enabled, PXE boot option entries are attempted only once instead of retrying them in a loop when "ForcePxe" is requested via IPMI interface</p>
Field Mode	<p>Disable/enable NIC BMC field mode. Allows users to enable/disable NIC BMC field mode. When the NIC BMC has field mode enabled, most of its functionality is disabled (beyond the serial console). The BlueField Platform's OOB interface will also not be functional if field mode is enabled.</p> <div data-bbox="402 1304 1463 1602" style="background-color: #f8d7da; padding: 10px;"> <p> Warning Leave this attribute to its default unless you are certain you wish to enable field mode on the NIC BMC. Consult the DPU BMC user manual for more information on field mode.</p> </div>
Set RTC	<p>Allows users to set the time and date for the real-time clock.</p>

Menu Option	Description
BlueField Modes	<ul style="list-style-type: none"> • Internal CPU Model: [<Separated> <Embedded>] • Host Privilege Level: [<Restricted> <Privileged>] • NIC Mode – sets the BlueField to operate in either NIC mode or DPU mode <div style="background-color: #ffffcc; padding: 10px; margin-top: 10px;"> <p>Note Any change to this attribute requires device reset to take effect.</p> </div>
Redfish Configuration	<p>Enable/disable Redfish support. If UEFI is unable to discover a Redfish server, it reverts to using the defined UEFI boot options (i.e., the "normal" UEFI boot sequence). Disabling Redfish helps improve boot time as the Redfish server discovery process is skipped.</p> <p>Disabling Redfish in the UEFI menu disables the Redfish client in UEFI. However, users can still interact with BMC Redfish server. Any request sent to the BMC Redfish server when the UEFI Redfish client is disabled would be cached by the BMC server until the UEFI Redfish client is re-enabled to process the pending requests.</p> <p>BMC Redfish server clears the pending cached request if BMC is factory reset or power cycled.</p> <p>The <code>RTCSync</code> option syncs RTC time with Redfish time under the Manager schema.</p>
Password Settings	<ul style="list-style-type: none"> • Default Password Policy – mandates the password being set adheres to the new policy of 12 characters minimum and 64 characters maximum. The last 5 passwords cannot be reused. • Set Legacy Password – set password with legacy password policy to accommodate a UEFI firmware downgrade. The new password policy (default) is not compatible with older versions of UEFI firmware.

Menu Option	Description
Reset EFI Variables	<p>This action clears all EFI variables to factory default state. Reset the device to take effect.</p> <div data-bbox="402 359 1463 699" style="background-color: #f0e6e6; padding: 10px;"> <p> Warning Only reset the EFI variable store under the advice of NVIDIA Enterprise Support. Resetting the EFI variable store deletes all UEFI variables including the boot options and the system may not boot without setting new boot options.</p> </div>
EmmcWipe	<p>Clears the eMMC disk. The action is immutable and all data on eMMC is lost after it is performed.</p> <div data-bbox="402 919 1463 1102" style="background-color: #fff9c4; padding: 10px;"> <p> Info This action is logged in the RShim log.</p> </div>
NvmeWipe	<p>Clears the NVMe SSD. This action is immutable and all data on NVMe SSD is lost after it is performed.</p> <div data-bbox="402 1318 1463 1501" style="background-color: #fff9c4; padding: 10px;"> <p> Info This action is logged in the RShim log.</p> </div>

Menu Option	Description
Large ICMC size	<p>Set the large ICMC size in hex and MB. Valid value: 0-100000h in 80h increments.</p> <p>i Info This menu option is only relevant for BlueField-3 platforms.</p>
Enable DDR 5600	<p>Enable/disable DDR max speed of 5600 MT/s.</p> <p>i Info This menu option is only relevant for B3220 BlueField-3 devices which have a default speed of 5200 MT/s. This speed can be increased to 5600 MT/s provided the hardware can support it, which is indicated via the fuse bits. Other BlueField SKUs are automatically fixed at 5600 MT/s irrespective of this setting and cannot be reduced to 5200 MT/s.</p>

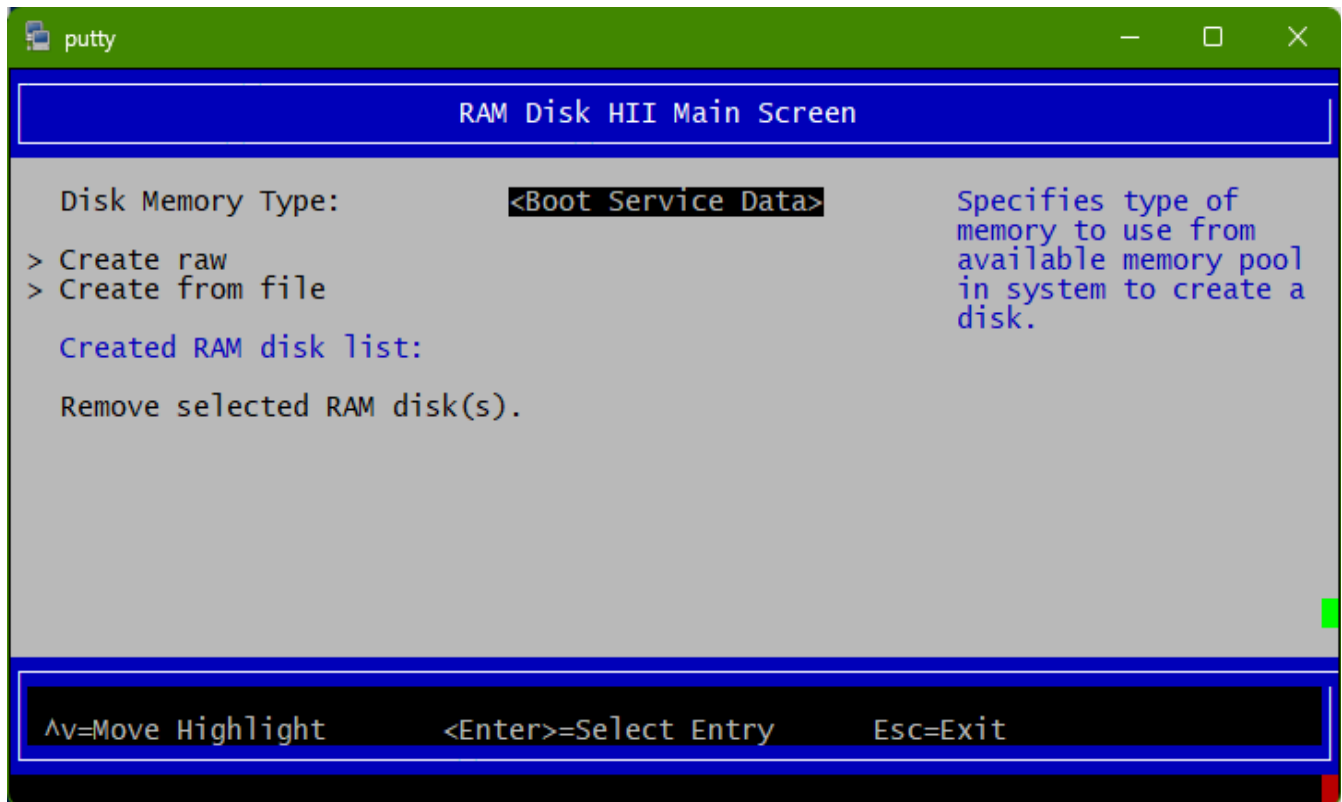
Menu Option	Description																		
L3 Cache Partition	Set the L3 cache partition level to allocate part of the L3 cache for the NIC and others for the BlueField-3 Arm core. The customer-selectable L3 cache partition to be allocated for the NIC can be selected from the following percentage levels:																		
	<table border="1"> <thead> <tr> <th data-bbox="402 422 675 485">L3 Cache Level #</th> <th data-bbox="675 422 1127 485">L3 Cache Percentage for NIC</th> </tr> </thead> <tbody> <tr> <td data-bbox="402 485 675 548">0 (default)</td> <td data-bbox="675 485 1127 548">0% (default)</td> </tr> <tr> <td data-bbox="402 548 675 611">1</td> <td data-bbox="675 548 1127 611">12.5%</td> </tr> <tr> <td data-bbox="402 611 675 674">2</td> <td data-bbox="675 611 1127 674">25%</td> </tr> <tr> <td data-bbox="402 674 675 737">3</td> <td data-bbox="675 674 1127 737">37.5%</td> </tr> <tr> <td data-bbox="402 737 675 800">4</td> <td data-bbox="675 737 1127 800">50%</td> </tr> <tr> <td data-bbox="402 800 675 863">5</td> <td data-bbox="675 800 1127 863">62.5%</td> </tr> <tr> <td data-bbox="402 863 675 926">6</td> <td data-bbox="675 863 1127 926">75%</td> </tr> <tr> <td data-bbox="402 926 675 978">7</td> <td data-bbox="675 926 1127 978">87.5%</td> </tr> </tbody> </table>	L3 Cache Level #	L3 Cache Percentage for NIC	0 (default)	0% (default)	1	12.5%	2	25%	3	37.5%	4	50%	5	62.5%	6	75%	7	87.5%
	L3 Cache Level #	L3 Cache Percentage for NIC																	
	0 (default)	0% (default)																	
	1	12.5%																	
	2	25%																	
	3	37.5%																	
	4	50%																	
	5	62.5%																	
	6	75%																	
7	87.5%																		
<div style="background-color: #f8d7da; padding: 10px;"> <p data-bbox="435 1083 488 1125"></p> <p data-bbox="505 1083 651 1125">Warning</p> <p data-bbox="505 1129 1263 1205">Do not enable this feature. More information will be provided in future software releases.</p> </div>																			

Secure Boot Configuration

Please refer to section "[Arm OS Secure Boot \(Configured from UEFI\)](#)" for more information.

RAM Disk Configuration

Provides option to create/delete RAM disks.

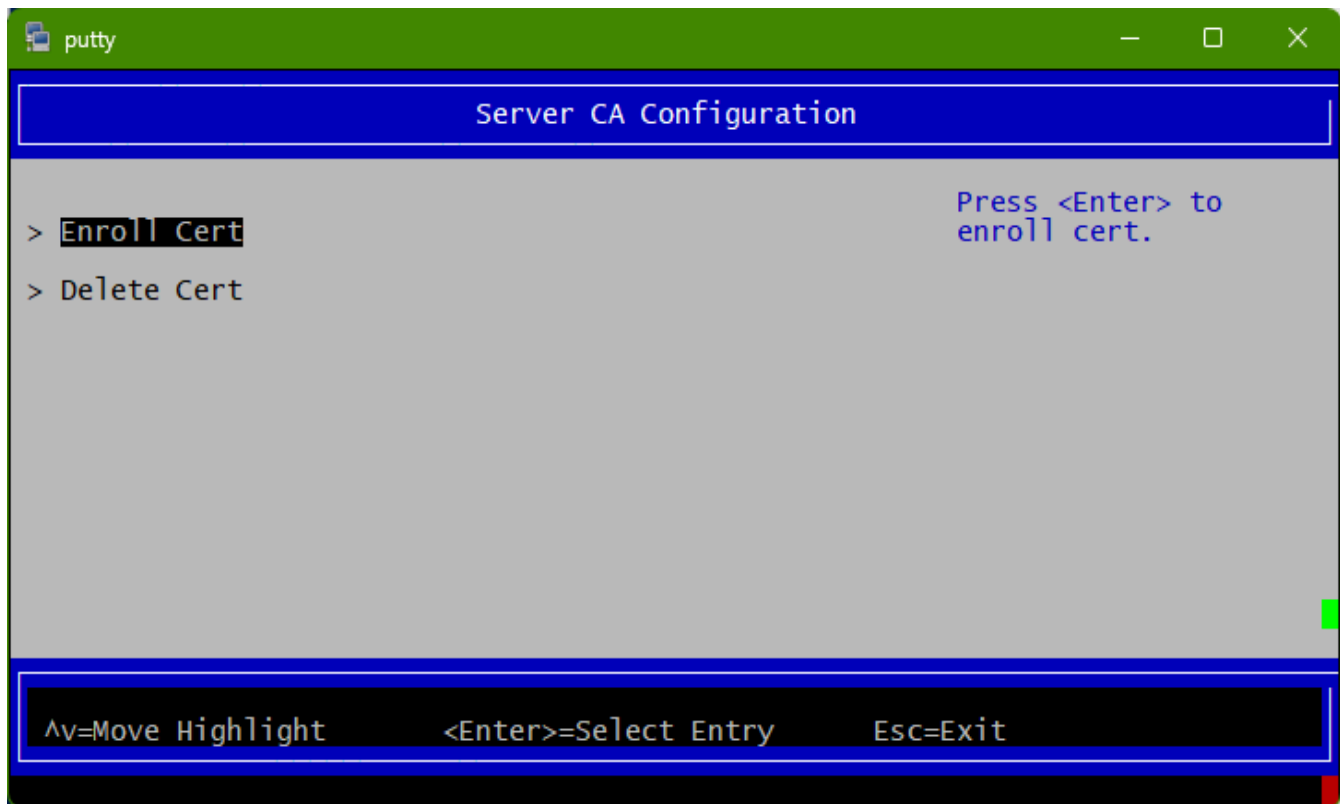
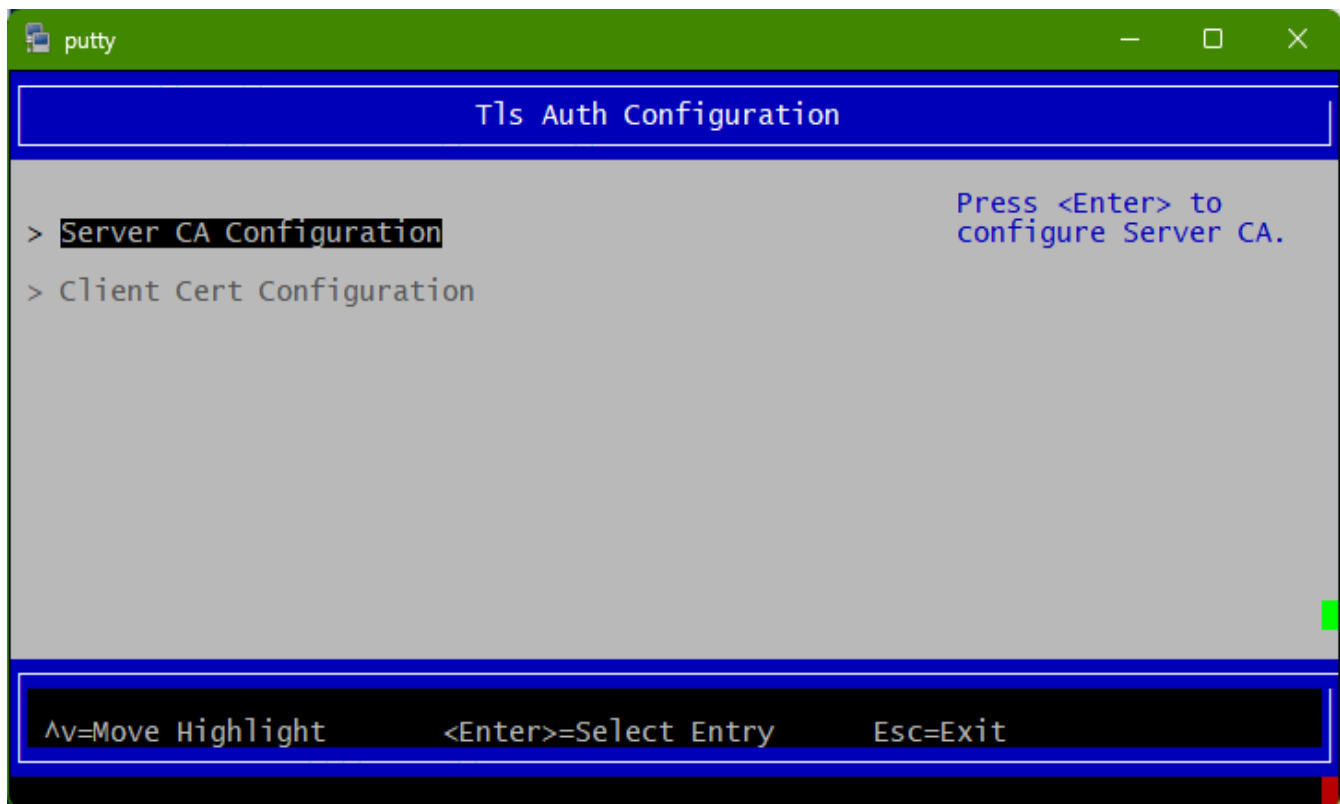


Tls Auth Configuration

Provides configuration (enroll/delete) of TLS auth certificates for HTTPS traffic in UEFI.

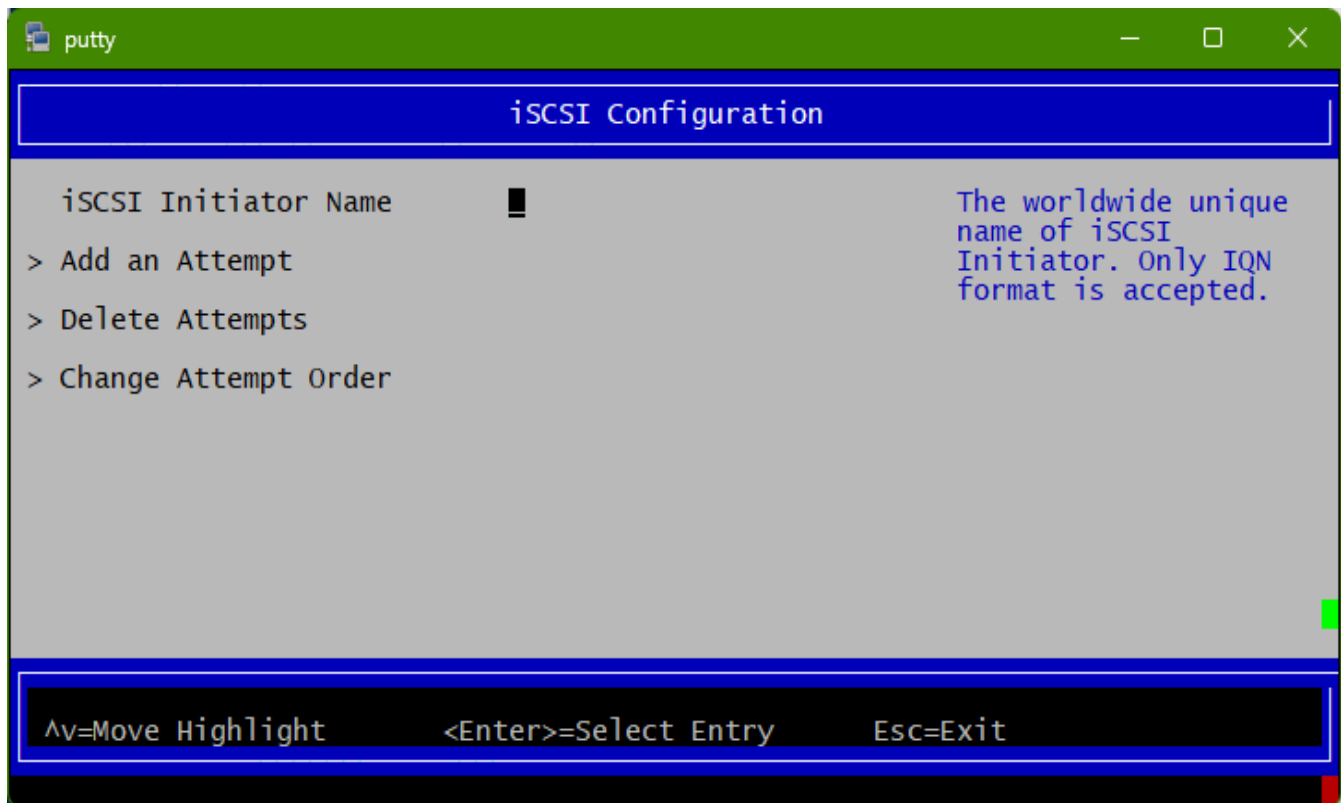
Note

If TLS Auth certificate is configured then all HTTPS traffic on all network interfaces will be verified. UEFI only supports Server CA configuration, Client CA configuration is currently not supported.



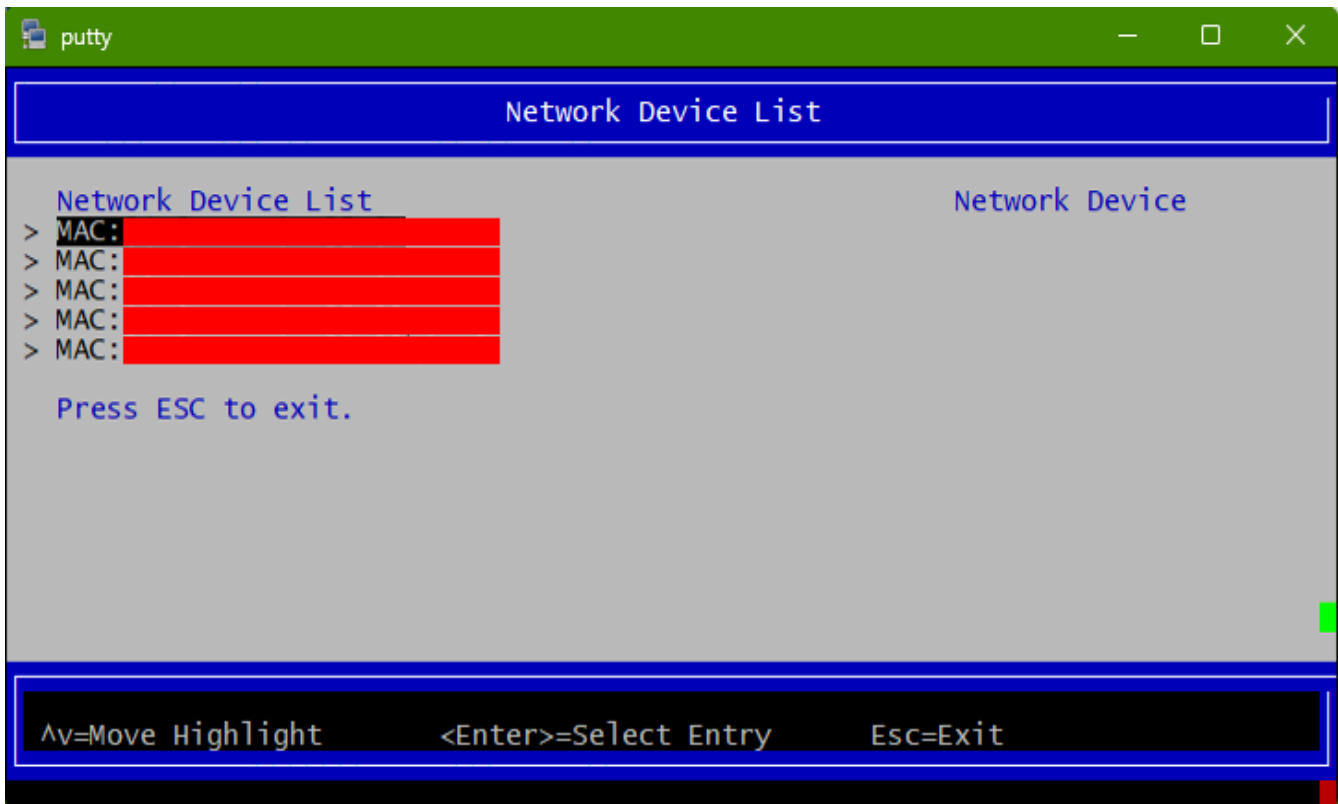
iSCSI Configuration

Provides configuration options for iSCSI.

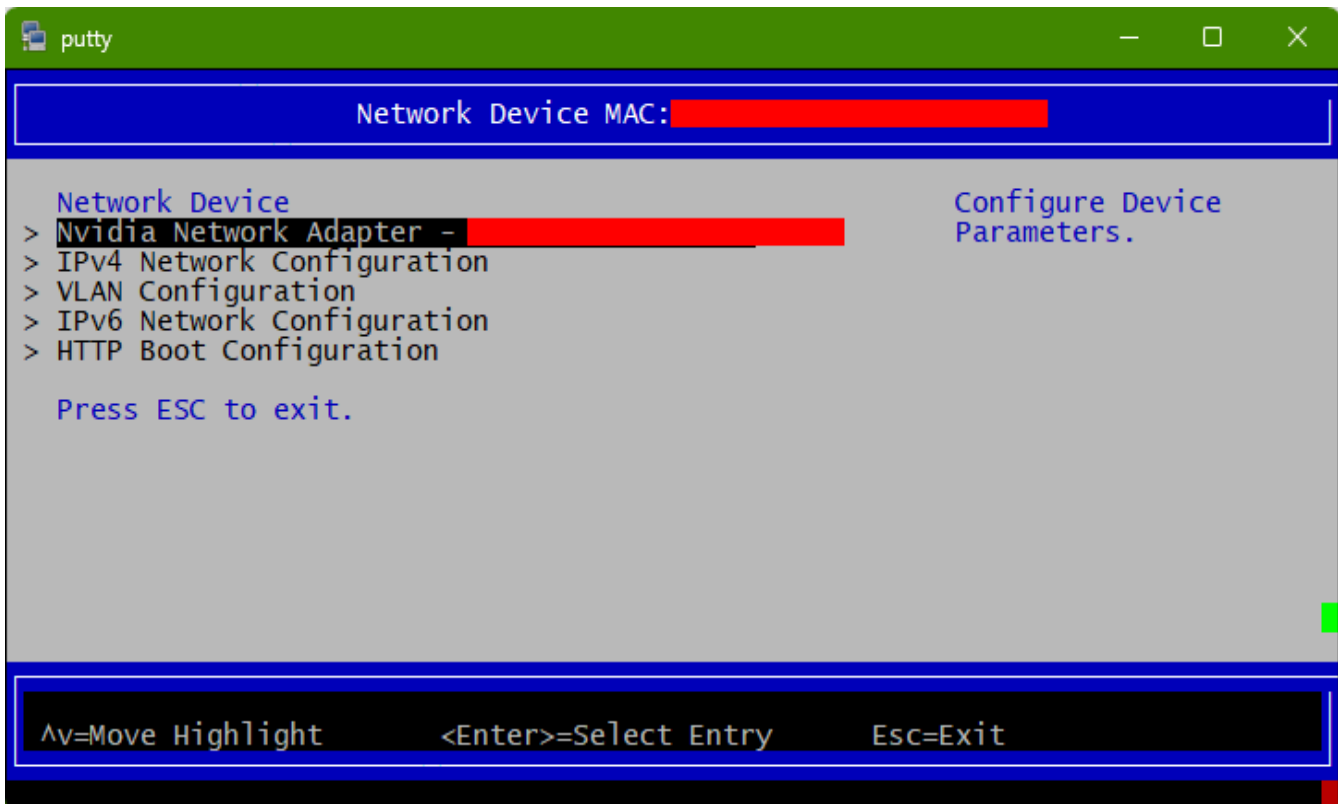


Network Device List

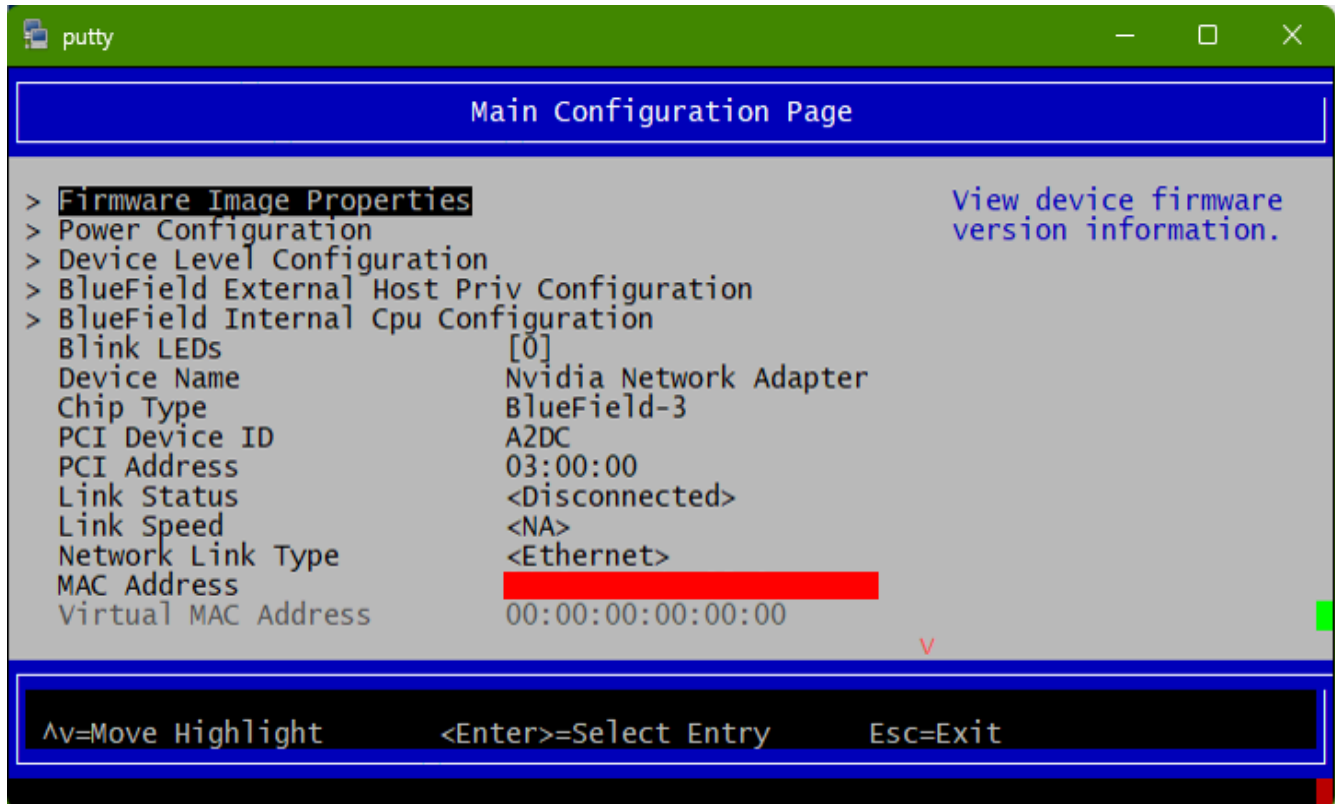
Lists the MAC addresses of the available network interfaces in UEFI.



Users can find more information (Link status, Link speed, PCI ID, Link type, etc.) on each interface upon selection. Users can also configure the interfaces (IPv4, IPv6, VLAN, HTTP BOOT) as needed.



The following menu can be reached by selecting the `Nvidia Network Adapter - <mac-address>` menu options:



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