

How to Boot Secure Malware Analytics Appliance into Recovery Mode with EFI Shell and Add Recovery Mode to Boot Options

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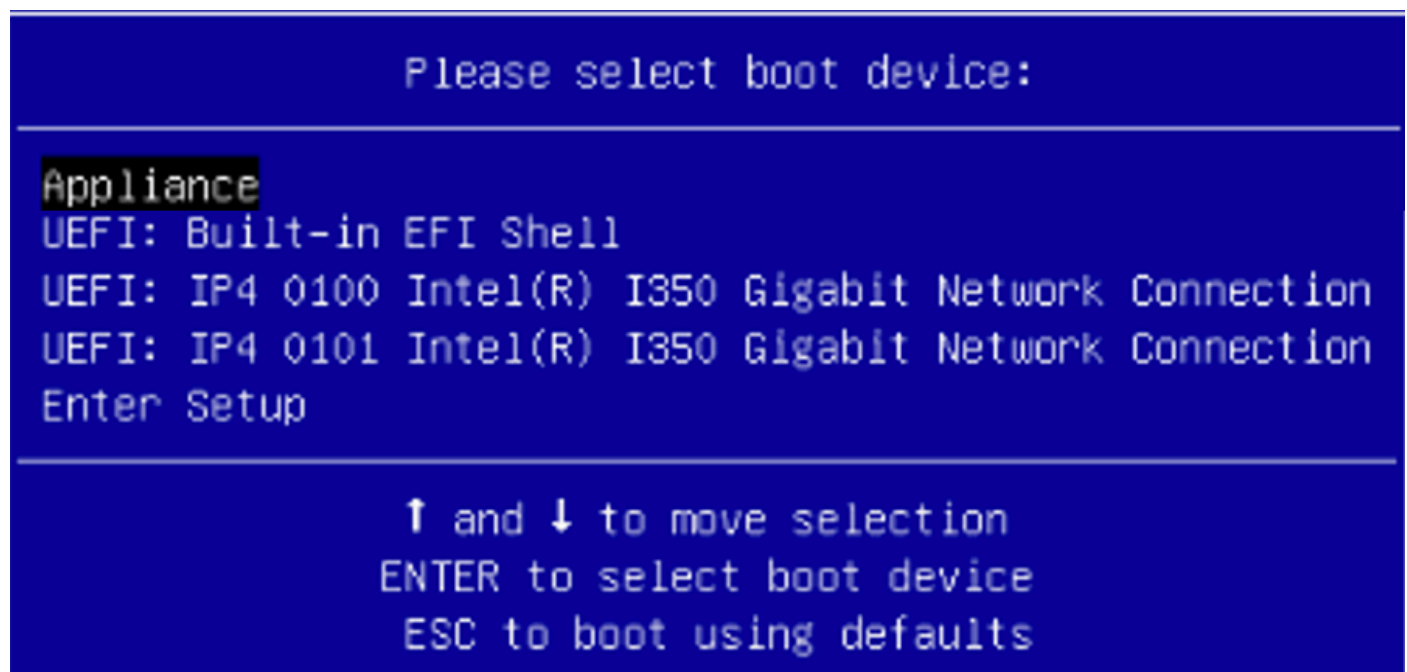
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Introduction

This document describes the steps on how to boot the Secure Malware Analytics® Appliance into recovery mode with EFI Shell and Add Recovery Mode to Boot Options.

Problem

You would be able to see as shown in the image, that we don't have the Recovery Mode displayed up in the BIOS window:



```
Please select boot device:
-----
Appliance
UEFI: Built-in EFI Shell
UEFI: IP4 0100 Intel(R) I350 Gigabit Network Connection
UEFI: IP4 0101 Intel(R) I350 Gigabit Network Connection
Enter Setup
-----
↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```

In order for us to boot into Recovery Mode in this scenario, we have to use the steps described in the next section.

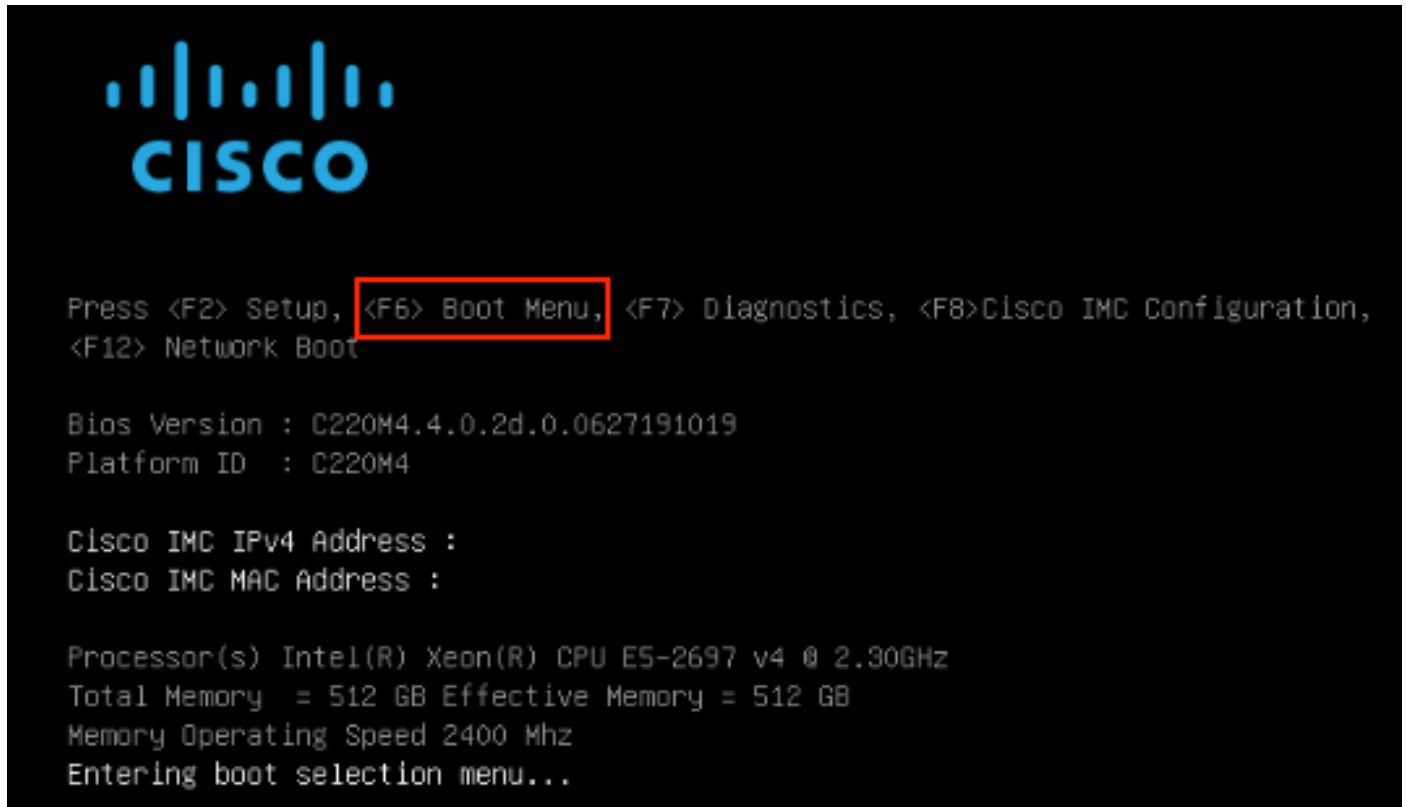
Solution

EFI Shell

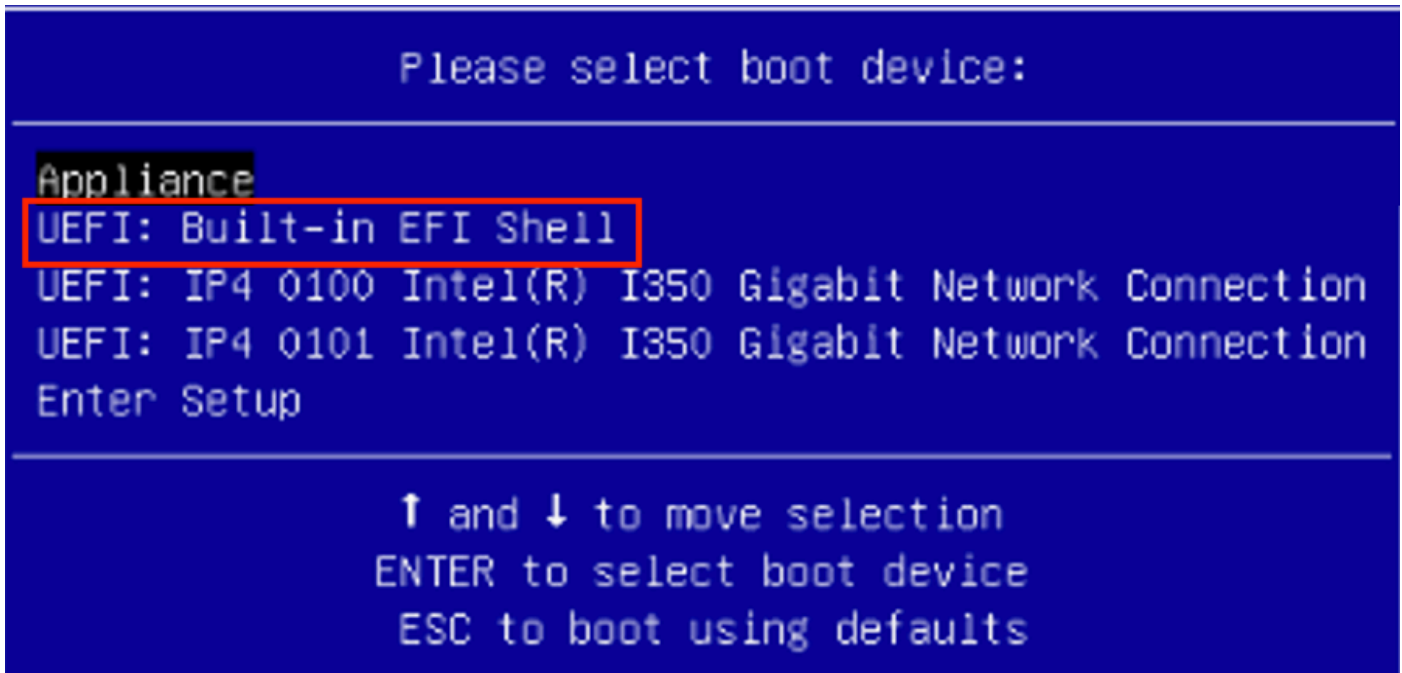
Step 1. Connect the KVM adapter to an external monitor and keyboard, and plug it into the KVM port located at the front of the device. If CIMC is available and configured, you can use a remote KVM.

Step 2. Reboot the device.

Step 3. Press **F6** at the BIOS window for a list of possible boot targets.

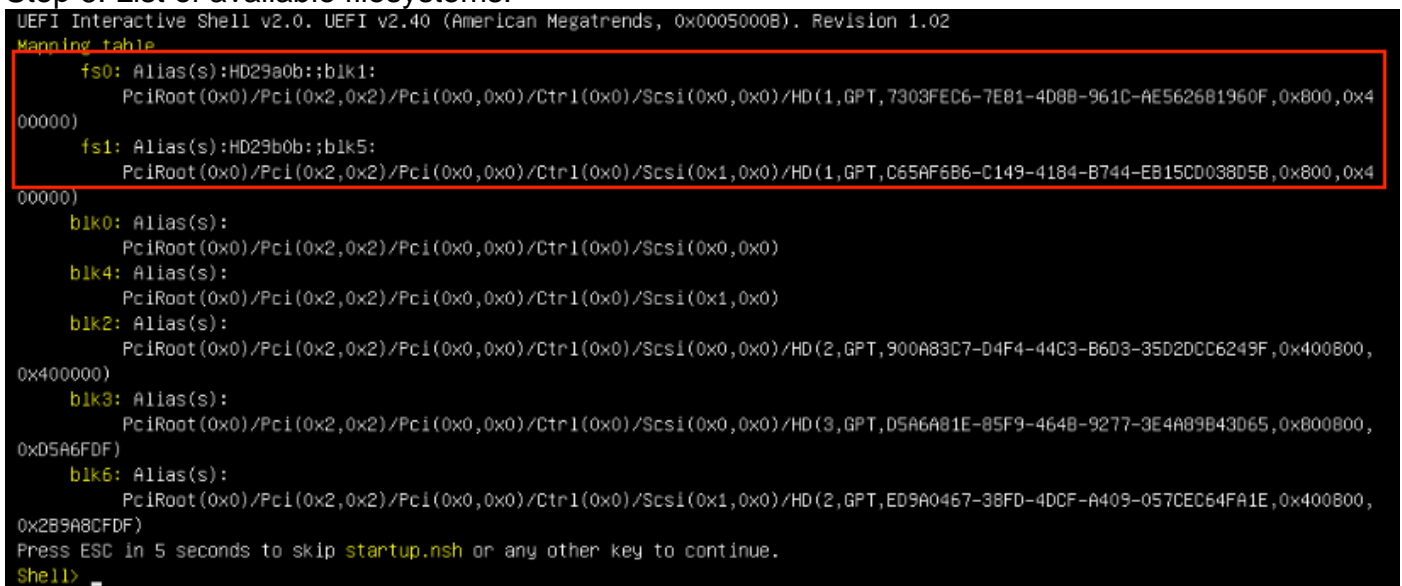


Step 4. Select **UEFI: Built-in EFI Shell**.



Step 5. Right after, press **ESC** before the startup script finishes to move into the EFI Shell.

Step 6. List of available filesystems.



Step 7. At this point, you need to locate the **Recovery** directory which is in one of the filesystems.

Step 8. Navigate into that directory.

```

Shell> fs1:
fs1:\> dir
Directory of: fs1:\
03/16/2022  17:12                31,736  meta_contents.tar.xz
10/26/2020  11:29                   149     startup.nsh
12/21/2016  23:42 <DIR>           4,096   efi
04/30/2021  08:28           836,030,464  recovery.rosfs
           3 File(s)  836,062,349 bytes
           1 Dir(s)
fs1:\> cd efi
fs1:\efi> dir
Directory of: fs1:\efi\
12/21/2016  23:42 <DIR>           4,096   .
12/21/2016  23:42 <DIR>              0     ..
04/30/2021  08:28 <DIR>           4,096   Recovery
           0 File(s)          0 bytes
           3 Dir(s)
fs1:\efi> cd Recovery
fs1:\efi\Recovery> dir
Directory of: fs1:\efi\Recovery\
12/21/2016  23:42 <DIR>           4,096   .
12/21/2016  23:42 <DIR>           4,096   ..
04/30/2021  08:28           18,255,144  boot.efi
           1 File(s)  18,255,144 bytes
           2 Dir(s)

```

Step 9. Execute the command **fs1:\efi\Recovery\boot.efi**

Step 10. Device boots into Recovery Mode.

```

>>
>>
>> help
COMMANDS:
  configure -- show|set: View or modify configuration variables
  coms      -- listening|open|all: Show open connections
  destroy-data -- Reset appliance to be a target for the restore process
  exit      -- Exit tgsh.
  graphql   -- Following content until the next empty line is treated as a GraphQL query to run
  halt      -- Halt appliance
  help      -- List available commands, or 'help COMMAND' for details.
  netconfig -- Update configured network settings
  netconfig-apply -- Modify active network configuration to match saved settings
  netinfo   -- routes|firewall|address|stats: Show network configuration and status
  opadmin   -- inport|check: Sync from, or validate, new configuration format
  passwd    -- Change password for this account
  ping      -- ping [-c count] [-I interface] host: ping a remote host
  poweroff  -- Power off appliance
  reboot    -- Reboot appliance
  reconfigure -- single|with-reinstall: Nondestructively rerun configuration in single-user mode, with or without preceding reinstall
  service   -- {status|start|stop|restart} [svc-name]: Toggle ThreatGRID services
  support-mode -- status|start|stop: Toggle support mode
  traceroute -- Determine the path used to a network location
  version   -- Shows appliance version
>>

```

Add Recovery Mode to Boot Options

Step 1. Connect the KVM adapter to an external monitor and keyboard, and plug it into the KVM

port located at the front of the device. If CIMC is available and configured, you can use a remote KVM.

Step 2. Reboot the device.

Step 3. Press **F6** at the BIOS window for a list of possible boot targets.

A screenshot of the Cisco BIOS boot menu. The screen is black with white text. At the top left is the Cisco logo. Below it, a line of text lists function keys: 'Press <F2> Setup, <F6> Boot Menu, <F7> Diagnostics, <F8>Cisco IMC Configuration, <F12> Network Boot'. The '<F6> Boot Menu' option is highlighted with a red rectangular box. Below this, system information is displayed: 'Bios Version : C220M4.4.0.2d.0.0627191019', 'Platform ID : C220M4', 'Cisco IMC IPv4 Address :', and 'Cisco IMC MAC Address :'. Further down, hardware specifications are listed: 'Processor(s) Intel(R) Xeon(R) CPU E5-2697 v4 @ 2.30GHz', 'Total Memory = 512 GB Effective Memory = 512 GB', and 'Memory Operating Speed 2400 Mhz'. The screen ends with 'Entering boot selection menu...'.

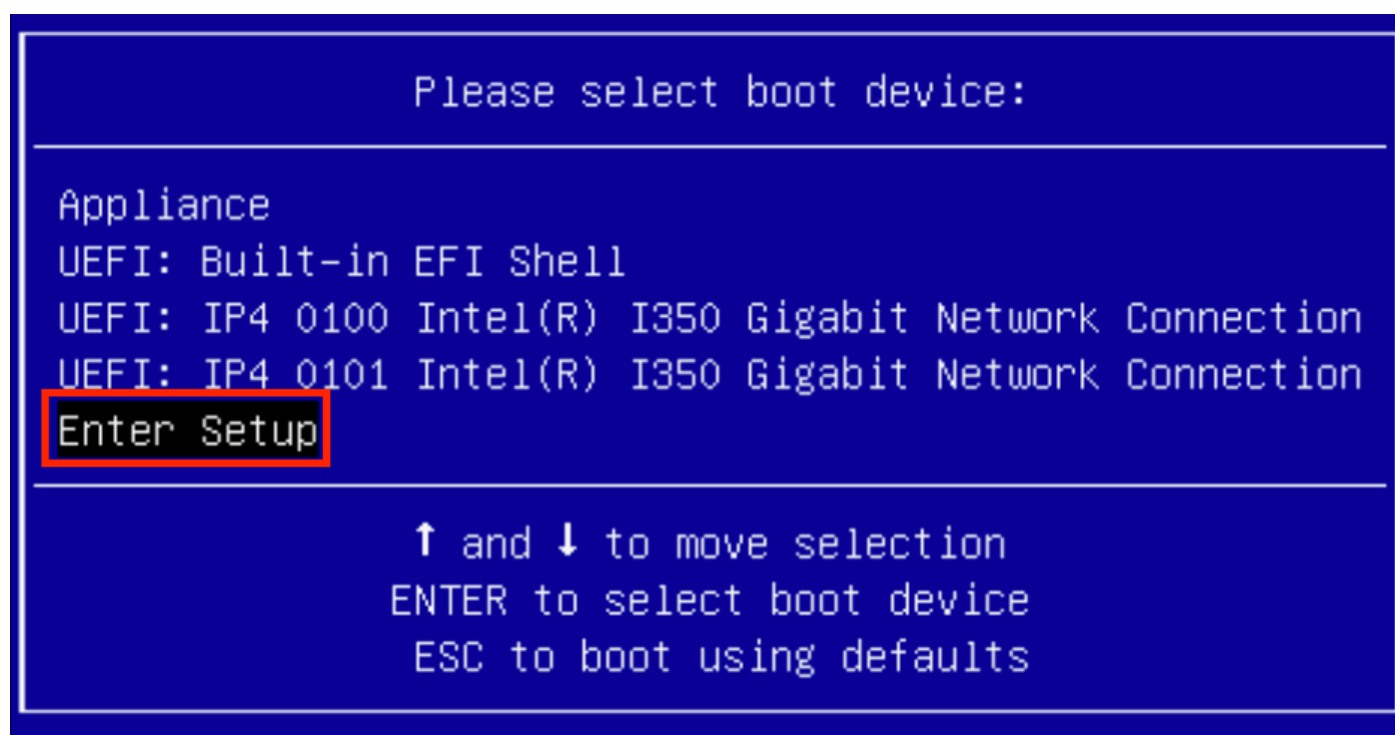
```
Press <F2> Setup, <F6> Boot Menu, <F7> Diagnostics, <F8>Cisco IMC Configuration,
<F12> Network Boot

Bios Version : C220M4.4.0.2d.0.0627191019
Platform ID : C220M4

Cisco IMC IPv4 Address :
Cisco IMC MAC Address :

Processor(s) Intel(R) Xeon(R) CPU E5-2697 v4 @ 2.30GHz
Total Memory = 512 GB Effective Memory = 512 GB
Memory Operating Speed 2400 Mhz
Entering boot selection menu...
```

Step 4. Select **Enter Setup**.

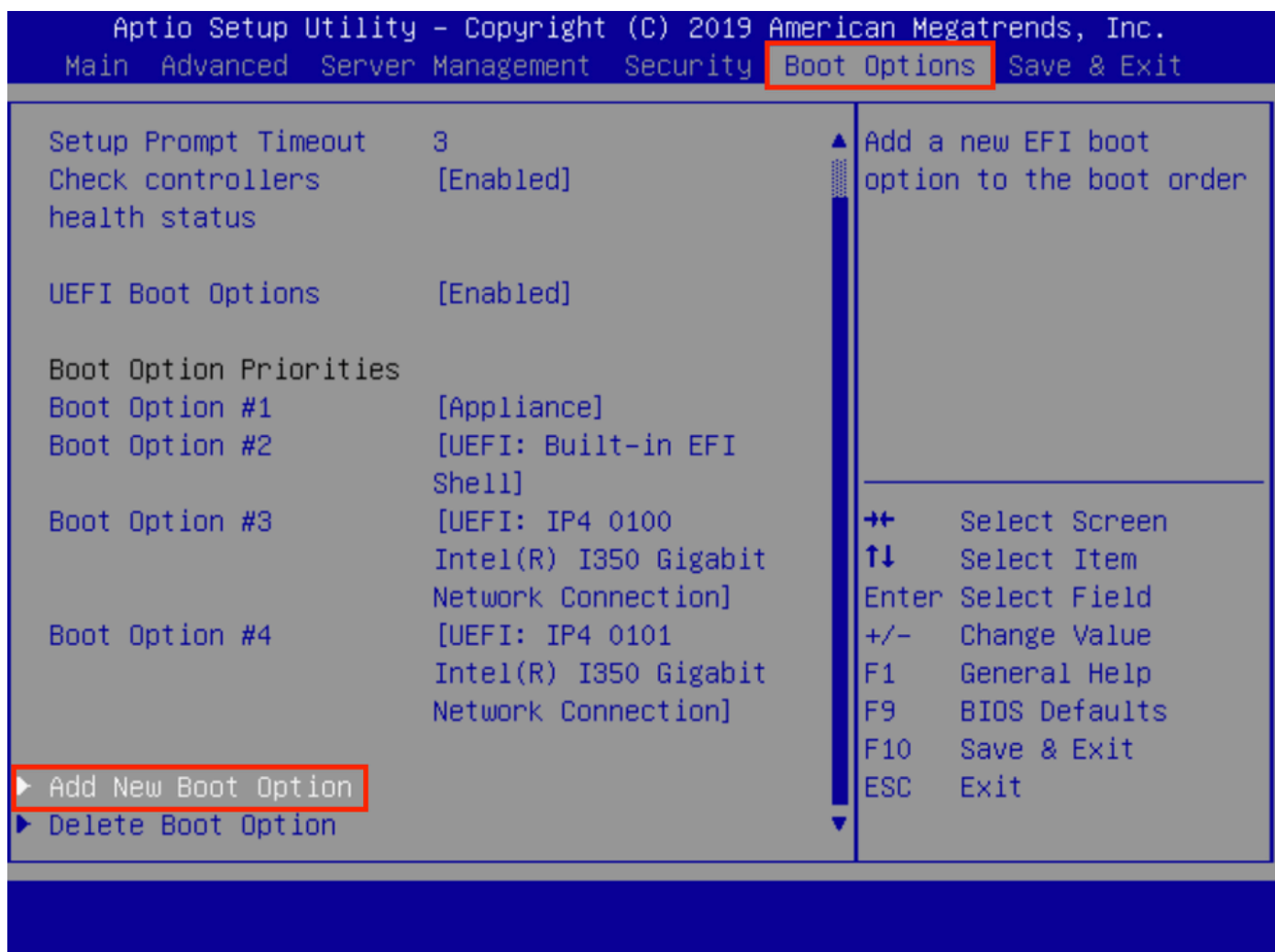
A screenshot of the BIOS boot device selection screen. The background is blue with white text. At the top, it says 'Please select boot device:'. Below this, a list of boot options is shown: 'Appliance', 'UEFI: Built-in EFI Shell', 'UEFI: IP4 0100 Intel(R) I350 Gigabit Network Connection', and 'UEFI: IP4 0101 Intel(R) I350 Gigabit Network Connection'. The 'Enter Setup' option is highlighted with a red rectangular box. At the bottom, instructions are provided: '↑ and ↓ to move selection', 'ENTER to select boot device', and 'ESC to boot using defaults'.

```
Please select boot device:

Appliance
UEFI: Built-in EFI Shell
UEFI: IP4 0100 Intel(R) I350 Gigabit Network Connection
UEFI: IP4 0101 Intel(R) I350 Gigabit Network Connection
Enter Setup

↑ and ↓ to move selection
ENTER to select boot device
ESC to boot using defaults
```

Step 5. Navigate into **Boot Options**, scroll to the bottom, and select **Add New Boot Option**.



Step 6. Select **Add boot option** and type **Recovery**.

Add New Boot Option

Add boot option

Path for boot option

Boot option File Path

Create

Specify name for new boot option

Add boot option
Recovery_

- ← Select Screen
- ↑↓ Select Item
- Enter Select Field
- +/- Change Value
- F1 General Help
- F9 BIOS Defaults
- F10 Save & Exit
- ESC Exit

Step 7. Select **Path for boot option** and select proper **File System**.

Add New Boot Option

Add boot option

Recovery

Path for boot option

Boot option File Path

Enter the path to the boot option in the format
fsx:\path\filename.efi

Select a File System

PCI(2|2)\PCI(0|0)\DevicePath(Type 1, SubType 5)SCSI(0,0)\HD(Part1,Sig7303f
PCI(2|2)\PCI(0|0)\DevicePath(Type 1, SubType 5)SCSI(1,0)\HD(Part1,Sigc65af

↑↓ Select Item
Enter Select Field
+/- Change Value
F1 General Help
F9 BIOS Defaults
F10 Save & Exit
ESC Exit

Step 8. Select <efi>, <Recovery> and <boot.efi>.

Select a File to Boot

<efi>

Select a File to Boot

<...>

<Recovery>

Select a File to Boot

<...>

boot.efi

Step 9. Select **Create**.

Add New Boot Option

Creates the newly formed boot option

Add boot option Recovery

Path for boot option

Boot option File Path \efi\Recovery\boot.efi

Create

- ←→ Select Screen
- ↑↓ Select Item
- Enter Select Field
- +/- Change Value
- F1 General Help
- F9 BIOS Defaults
- F10 Save & Exit
- ESC Exit

Step 10. New Boot Option creates.

Add New Boot Option

Creates the newly formed boot option

Add boot option Recovery

Path for boot option

Boot option File Path \efi\Recovery\boot.efi

Create

SUCCESS

Boot Option Created Successfully

OK

Select Screen

Select Item

Select Field

+/- Change Value

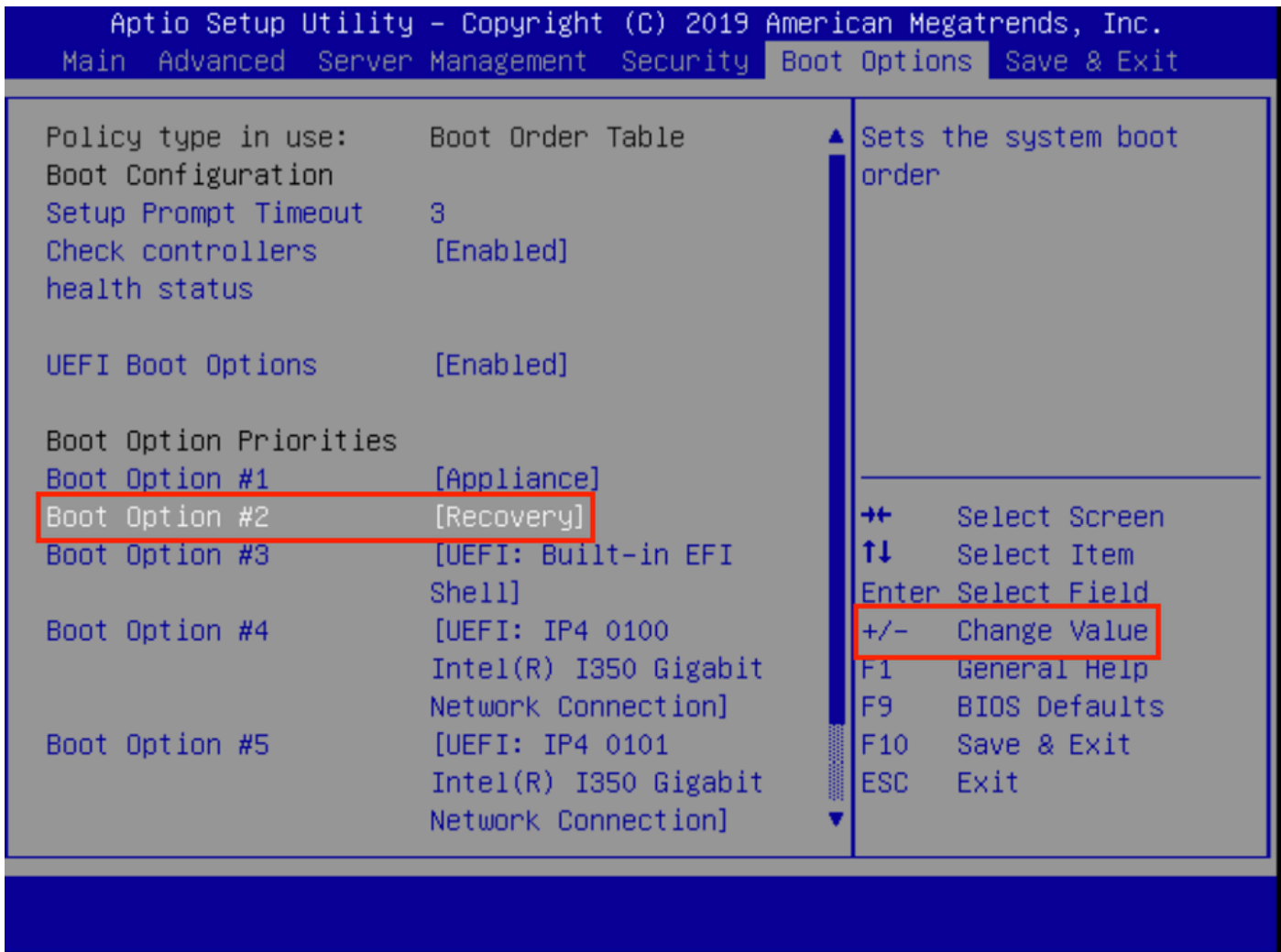
F1 General Help

F9 BIODS Defaults

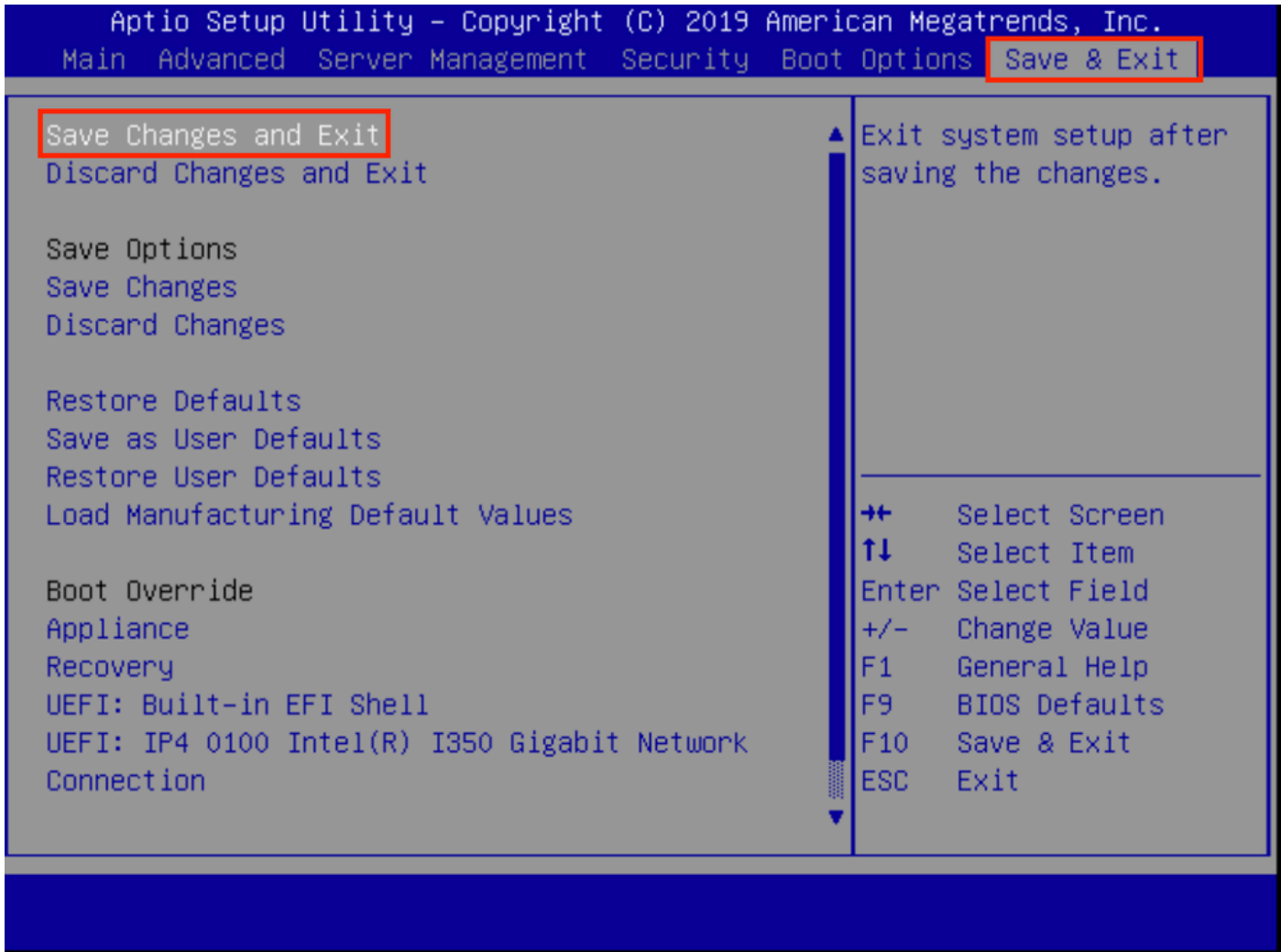
F10 Save & Exit

ESC Exit

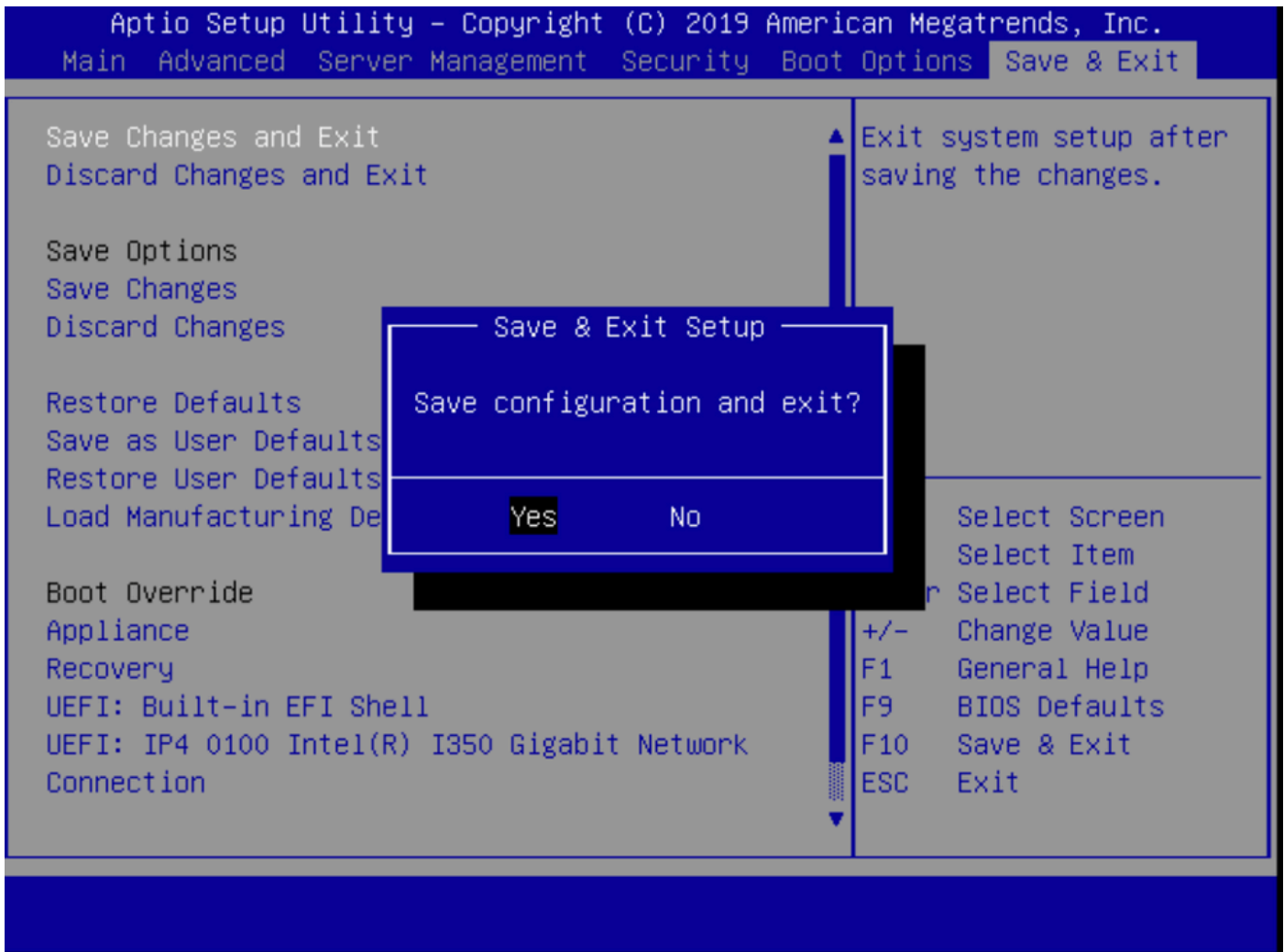
Step 12. Put **Recovery** option at #2 place with **+/-** buttons.



Step 13. Navigate into **Save & Exit** and select **Save Changes and Exit**.



Step 14. Confirm changes.



Step 15. The device boots normally.

For more information, see the [Secure Malware Analytics Appliance Administration Guide](#).