



Products Claims Testing
ADPC00128
Ultratest Solutions Ltd

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DISCLAIMER

The Product Claims Test is presented as the outcome of a specific test ran in laboratory environment under controlled conditions. Use of this certified product for the purpose of sanitizing data from devices tested needs to be done so after a risk assessment process. ADISA reserves the right to review the validity of this award upon changes in threat landscape.

LIABILITY

ADISA accepts no liability for any claims resulting from the use of the product tested.

REVISION HISTORY

01/02/2022 Revision 1.0 issued to Jon Woodward



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1.0 Executive Summary

This report details the findings in relation to the execution of the ADISA Testing Methodology on Product Claims Test ADPC128 – Ultratest Solutions Ltd.

On the 24th of September 2021, Ultratest submitted their integrated solution (hardware and software) **Nemesis** to the ADISA Forensic Laboratory to conduct a Product Claims Test in a controlled lab environment on two network devices. The claims test was carried out in accordance with ADISA Claims Testing (ACT) v1.0 and supporting document ADISA Testing Methodology v1.7, both of which are available from ADISA.

The claim made for the device were:

“Ultratest product Nemesis v1.0 when used in accordance with the user manual v1.0.2 using algorithm VIP Purge will sanitise all user data including IP Addresses, Passwords, and Domain Names while retaining full functionality of the products listed in section 3 (of the Application Form), such that forensics techniques aligned with Test Level 1 cannot recover user data.”ADPC128

After testing it is confirmed that the ADPC128 **claim is true** for the devices tested up to Test Level 1 results.

1.1 Test Software

Ultratest submitted *Nemesis* software which was embedded in a hardware configuration installed into a flight case, to be test under the premise that, when executed on the specified network devices listed in section 1.2, whilst following the user manual, will sanitise all user data present on device and cannot recover the erased data using Level 1 forensic attacks. Details of the software submitted for testing is in table below:

Name	Version Number	User Manual Version
Nemeis	1.0	1.0.2

1.2 Test Media

The products which targets for this test are listed below:

Make	Model	Serial Number	IOS Version
Cisco	1921	FCZ1810C5MU	C1900 v15.5
Cisco	WS-C3750-48TS-E	FD01144Z7F3	C3750-IPBASEK9-M v12.2

2.0 Testing for Network Devices (e.g. Routers, Switches and Firewalls)

2.1 Methodology

This test phase is designed to evaluate the claim made by recreating an attack by a threat adversary utilising standard intrusive testing tools designed to read data from the internal flash memory of the device via the console port using terminal emulator software.

1. The test media was connected to workstation via a console port. Terminal emulator software was used to boot device.
2. Completed initial configuration of device then confirmed no user data was present on device prior to testing.
3. Configured IP Address and Subnet Mask and saved configuration.
4. Text file 'ADISA.txt' was created and imported to all user accessible on device.
5. The device was then sanitised using applicant's software in accordance with the user manual.
6. The device was then analysed use the following tools to verify all user data has been erased. For this test, there is no tolerance for remnant user data and the result is a straight Pass or Fail.
 - Software based tools/techniques such as:
 - PuTTY
 - Tera term

2.2 Test Level

Test Level 1 replicated an attack on these devices being made by an aggressor with capabilities outlined below.

Risk Level	Threat Actor and Compromise Methods	Test Level
1 (Low)	Casual or opportunistic threat actor only able to mount high-level non-invasive and non-destructive software attacks utilising freeware, OS tools and COTS products. Commercial data recovery organisation able to mount non-invasive and non-destructive software attacks and hardware attacks.	1

3.0 Summary of Findings

The table below shows the findings of the Claims Test carried out on the devices listed.

Device Description	Operating System	Test Result
Cisco Router 1921	IOS C1900 v15.5	PASS
Cisco Switch WS-C3750-48TS-E	IOS C3750-IPBASEK9-M v12.2	PASS

Pass means that *ADPC128* mitigates the threat posed by the Threat Actors holding the capabilities outlined by Test Level 1.

3.1 Test Record Extract

Level 1 Testing – Cisco Router 1921

The network device was a Cisco router with model number 1921, serial number FCZ1810C5MU and a capacity of approximately 512 MB of main memory. There was also an unknown capacity of USBFlash memory in device. The version of operation system running on the device was IOS C1900 v15.5. There was no visible damage to casing.

The device was checked to verify that no user data was present prior to testing. The device was then connected to a forensic workstation via the console port and using PuTTY v0.76 terminal emulator software, the device was booted. Initial configuration for the router was completed, IP address 10.20.41.23 and Subnet Mask 255.255.255.0 were configured on interface GigabitEthernet 0/1 and set to 'no shut'.

A USB drive containing text file 'ADISA.txt' was copied onto all user accessible directories – nvram and USBFlash0. Configuration was saved and device was powered off. Router was then connected to test rig and erasure is executed. After completion, device was connected to workstation via console and using PuTTY device is analysed with no remnant to user data.

Result

There is no user data present in Post-Wipe analysis of device using PuTTY terminal emulator software.

Level 1 Testing – Cisco Switch 3750

The network device was a Cisco switch with model number WS-C3750-48TS-E, serial number FD01144Z7F3 and a capacity of approximately 16 MB of main memory. The version of operation system running on the device was IOS C3750-IPBASEK9-M v12.2. There was no visible damage to casing.

The device was checked to verify that no user data was present prior to testing. The device was then connected to a forensic workstation via the console port and using PuTTY v0.76 terminal emulator software, the device was booted. Initial configuration for the switch was completed, IP address 10.20.41.23, Subnet Mask 255.255.255.0 and Default Gateway 10.20.41.1 were configured on interface vlan1 and set to 'no shut'.

Text file 'ADISA.txt' was copied onto all user accessible directories – nvram and flash from workstation using xmodem transfer protocol. Configuration was saved and device was powered off. Switch was then connected to test rig and erasure is executed. After completion, switch was connected to workstation via console and using PuTTY device is analysed with no remnant to user data.

Result

There is no user data present in Post-Wipe analysis of device using PuTTY terminal emulator software.

3.2 Forensic Software Used

The details of forensic software used during the testing process are listed in the table below:

<i>Name</i>	<i>Version Number</i>	<i>What it was used for</i>
FTK Imager	0.76	Terminal emulation analysis
Tera Term	4.106	Terminal emulation analysis

The software used in this test are not validated.

3.3 Forensic Hardware Used

The details of forensic software used during the testing process are listed in the table below:

<i>Make</i>	<i>Model Number</i>	<i>Serial Number</i>	<i>OS Version</i>	<i>What it was used for</i>
HP	Prodesk 600	CZC5332W9T	Windows 10 Pro	Workstation
Panasonic	DMC-FS50	WG3HB002289	N/A	Camera

4.0 Conclusions

Claims Test Result: Pass on all devices tested.

The two products passed the claims test as all-forensic data recovery techniques up to and including ADISA Test Level 1 failed to recover any data. The software tested was the Nemesis v1.0

Claims Test Carried Out By: Godfred Badu

Test Facility: ADISA Research Centre

Signature:

Date: 01.02.2022

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5.0 Appendix

Appendix A – Cisco router 1921

Initial Device Verification

Figure 1 shows a screenshot of directory entries on the Cisco router 1921. It confirms that there is no user data present on device.

```
Router#dir all
Directory of archive:/

No files in directory

No space information available
Directory of system:/

 2 -r--      0          <no date> default-running-config
 4 dr-x      0          <no date> memory
 1 -rw-     1000      <no date> running-config
 3 dr-x      0          <no date> vfiles

No space information available
Directory of tmpsys:/

 73 drw-      0          <no date> call-home
 6 drw-      0          <no date> eem_lib_system
 5 drw-      0          <no date> eem_lib_user
 18 -rw-      0          <no date> eem_pnt_0
 20 -rw-      0          <no date> eem_pnt_1
 38 -rw-      0          <no date> eem_pnt_10
 40 -rw-      0          <no date> eem_pnt_11
 42 -rw-      0          <no date> eem_pnt_12
--More--    44 -rw-      0          <no date> eem_pnt_13
 46 -rw-      0          <no date> eem_pnt_14
 48 -rw-      0          <no date> eem_pnt_15
 22 -rw-      0          <no date> eem_pnt_2
 24 -rw-      0          <no date> eem_pnt_3
 26 -rw-      0          <no date> eem_pnt_4
 28 -rw-      0          <no date> eem_pnt_5
 30 -rw-      0          <no date> eem_pnt_6
 32 -rw-      0          <no date> eem_pnt_7
 34 -rw-      0          <no date> eem_pnt_8
 36 -rw-      0          <no date> eem_pnt_9
 4 drw-      0          <no date> eem_policy
 8 drw-      0          <no date> eem_pub
 17 -rw-      0          <no date> eem_rpc_0
 19 -rw-      0          <no date> eem_rpc_1
 37 -rw-      0          <no date> eem_rpc_10
 39 -rw-      0          <no date> eem_rpc_11
 41 -rw-      0          <no date> eem_rpc_12
 43 -rw-      0          <no date> eem_rpc_13
 45 -rw-      0          <no date> eem_rpc_14
 47 -rw-      0          <no date> eem_rpc_15
 21 -rw-      0          <no date> eem_rpc_2
 23 -rw-      0          <no date> eem_rpc_3
--More--    25 -rw-      0          <no date> eem_rpc_4
 27 -rw-      0          <no date> eem_rpc_5
 29 -rw-      0          <no date> eem_rpc_6
 31 -rw-      0          <no date> eem_rpc_7
 33 -rw-      0          <no date> eem_rpc_8
 35 -rw-      0          <no date> eem_rpc_9
 7 drw-      0          <no date> eem_temp
 1 dr-x      0          <no date> lib
 9 drw-      0          <no date> macro_scripts

No space information available
Directory of nvram:/

 254 -rw-      0          <no date> startup-config
 255 ----      0          <no date> private-config
 256 -rw-      0          <no date> underlying-config
 1 -rw-     2945      <no date> cwmv_inventory
 4 ----      57          <no date> persistent-data

262136 bytes total (257988 bytes free)
Directory of usbflash0:/

 1 -rw-   79836372  Oct 21 2021 09:11:00 +00:00 c1900-universalk9-mz.SPA.155-3.MB.bin
--More--
255537152 bytes total (175697920 bytes free)
Router#
```

Figure 1. Initial Device Verification

Writing Data

```
Router#
*Oct 21 09:28:55.355: %USBFLASH-5-CHANGE: usbflash1 has been inserted!
Router#
Router#copy usbflash0 1:/ADISA.txt nvram:/
Destination filename [ADISA.txt]?
%Error opening usbflash1:/ADISA.txt (File not found)
Router#dir usbflash1:
Directory of usbflash1:/

 12  -rw-          6  Oct 21 2021 10:53:26 +00:00  ADISA.TXT

2038104064 bytes total (1229389824 bytes free)
Router#dir usbflash1:copy usbflash1:/ADISA.txt nvram:/
Destination filename [ADISA.txt]?
%Error opening usbflash1:/ADISA.txt (File not found)
Router#copy usbflash1:/ADISA.TXT v nvrma:/
^
% Invalid input detected at '^' marker.

Router#copy usbflash1:/ADISA.TXT nvrma:/a:/ am:/
Destination filename [ADISA.TXT]?
6 bytes copied in 2.232 secs (3 bytes/sec)

Router#copy usbflash1:/ADISA.TXT nvram:/          usbflash0:/
Destination filename [ADISA.TXT]?
Copy in progress...C
6 bytes copied in 0.496 secs (12 bytes/sec)

Router#
*Oct 21 09:30:42.103: %USBFLASH-5-CHANGE: usbflash1 has been removed!
Router#
Router#con onf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface gig
Router(config)#interface gigabitEthernet 0/1
Router(config-if)#ip address 10.20.41.23 255.255.255.0
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#ip
*Oct 21 09:31:12.211: %LINK-3-UPDOWN: Interface GigabitEthernet0/1, changed state to downdefault-gateway 10.20.41.1
Router(config)#exit
Router#wri
*Oct 21 09:31:22.267: %SYS-5-CONFIG_I: Configured from console by console
Building configuration...
[OK]
```

Figure 2. Write Data to Device

Pre-Wipe Verification

```

Router#dir all
Directory of archive:/

No files in directory

No space information available
Directory of system:/

  2 -r--      0          <no date> default-running-config
  4 dr-x      0          <no date> memory
  1 -rw-     1105        <no date> running-config
  3 dr-x      0          <no date> vfiles

No space information available
Directory of tmpsys:/

 73 drw-      0          <no date> call-home
  6 drw-      0          <no date> eem_lib_system
  5 drw-      0          <no date> eem_lib_user
 18 -rw-      0          <no date> eem_pnt_0
 20 -rw-      0          <no date> eem_pnt_1
 38 -rw-      0          <no date> eem_pnt_10
 40 -rw-      0          <no date> eem_pnt_11
 42 -rw-      0          <no date> eem_pnt_12
--More--    44 -rw-      0          <no date> eem_pnt_13
 46 -rw-      0          <no date> eem_pnt_14
 48 -rw-      0          <no date> eem_pnt_15
 22 -rw-      0          <no date> eem_pnt_2
 24 -rw-      0          <no date> eem_pnt_3
 26 -rw-      0          <no date> eem_pnt_4
 28 -rw-      0          <no date> eem_pnt_5
 30 -rw-      0          <no date> eem_pnt_6
 32 -rw-      0          <no date> eem_pnt_7
 34 -rw-      0          <no date> eem_pnt_8
 36 -rw-      0          <no date> eem_pnt_9
  4 drw-      0          <no date> eem_policy
  8 drw-      0          <no date> eem_pub
 17 -rw-      0          <no date> eem_rpc_0
 19 -rw-      0          <no date> eem_rpc_1
 37 -rw-      0          <no date> eem_rpc_10
 39 -rw-      0          <no date> eem_rpc_11
 41 -rw-      0          <no date> eem_rpc_12
 43 -rw-      0          <no date> eem_rpc_13
 45 -rw-      0          <no date> eem_rpc_14
 47 -rw-      0          <no date> eem_rpc_15
 21 -rw-      0          <no date> eem_rpc_2
 23 -rw-      0          <no date> eem_rpc_3
--More--    25 -rw-      0          <no date> eem_rpc_4
 27 -rw-      0          <no date> eem_rpc_5
 29 -rw-      0          <no date> eem_rpc_6
 31 -rw-      0          <no date> eem_rpc_7
 33 -rw-      0          <no date> eem_rpc_8
 35 -rw-      0          <no date> eem_rpc_9
  7 drw-      0          <no date> eem_temp
  1 dr-x      0          <no date> lib
  9 drw-      0          <no date> macro_scripts

No space information available
Directory of nvram:/

254 -rw-     1105        <no date> startup-config
255 ----      5          <no date> private-config
256 -rw-     1105        <no date> underlying-config
  1 -rw-     2945        <no date> cwpmp_inventory
  4 ----      57          <no date> persistent-data
  5 -rw-      6          <no date> ADISA.TXT

262136 bytes total (255854 bytes free)
Directory of usbflash0:/

--More--    1 -rw-   79836372  Oct 21 2021 09:11:00 +00:00 c1900-universalk9-mz.SPA.155-3.M8.bin
  2 -rw-      6  Oct 21 2021 09:30:32 +00:00 ADISA.TXT

255537152 bytes total (175693824 bytes free)

```

Figure 3. Pre-Wipe Verification

Post-Wipe Verification

```

Router#dir all
Directory of archive:/

No files in directory

No space information available
Directory of system:/

  2 -r--          0          <no date> default-running-config
  4 dr-x          0          <no date> memory
  1 -rw-        1000          <no date> running-config
  3 dr-x          0          <no date> vfiles

No space information available
Directory of tmpsys:/

 73 drw-          0          <no date> call-home
  6 drw-          0          <no date> eem_lib_system
  5 drw-          0          <no date> eem_lib_user
 18 -rw-          0          <no date> eem_pnt_0
 20 -rw-          0          <no date> eem_pnt_1
 38 -rw-          0          <no date> eem_pnt_10
 40 -rw-          0          <no date> eem_pnt_11
 42 -rw-          0          <no date> eem_pnt_12
--More-- ██████████ ██████████ 44 -rw-          0          <no date> eem_pnt_13
 46 -rw-          0          <no date> eem_pnt_14
 48 -rw-          0          <no date> eem_pnt_15
 22 -rw-          0          <no date> eem_pnt_2
 24 -rw-          0          <no date> eem_pnt_3
 26 -rw-          0          <no date> eem_pnt_4
 28 -rw-          0          <no date> eem_pnt_5
 30 -rw-          0          <no date> eem_pnt_6
 32 -rw-          0          <no date> eem_pnt_7
 34 -rw-          0          <no date> eem_pnt_8
 36 -rw-          0          <no date> eem_pnt_9
  4 drw-          0          <no date> eem_policy
  8 drw-          0          <no date> eem_pub
 17 -rw-          0          <no date> eem_rpc_0
 19 -rw-          0          <no date> eem_rpc_1
 37 -rw-          0          <no date> eem_rpc_10
 39 -rw-          0          <no date> eem_rpc_11
 41 -rw-          0          <no date> eem_rpc_12
 43 -rw-          0          <no date> eem_rpc_13
 45 -rw-          0          <no date> eem_rpc_14
 47 -rw-          0          <no date> eem_rpc_15
 21 -rw-          0          <no date> eem_rpc_2
 23 -rw-          0          <no date> eem_rpc_3
--More-- ██████████ ██████████ 25 -rw-          0          <no date> eem_rpc_4
 27 -rw-          0          <no date> eem_rpc_5
 29 -rw-          0          <no date> eem_rpc_6
 31 -rw-          0          <no date> eem_rpc_7
 33 -rw-          0          <no date> eem_rpc_8
 35 -rw-          0          <no date> eem_rpc_9
  7 drw-          0          <no date> eem_temp
  1 dr-x          0          <no date> lib
  9 drw-          0          <no date> macro_scripts

No space information available
Directory of nvram:/

 254 -rw-          0          <no date> startup-config
 255 ----          0          <no date> private-config
 256 -rw-          0          <no date> underlying-config
  1 -rw-        2945          <no date> cwmp_inventory
  4 ----          57          <no date> persistent-data

262136 bytes total (257988 bytes free)
Directory of usbflash0:/

  1 -rw-    79836372 Oct 27 2021 14:46:22 +00:00 c1900-universalk9-mz.SPA.155-3.MB.bin
--More-- ██████████ ██████████
255537152 bytes total (175697920 bytes free)
Router#exit

```

Figure 4. Post-Wipe Verification

Appendix B – Cisco Switch 3750

Initial Device Verification

Figure 1 shows a screenshot of directory entries on the Cisco router 3750. It confirms that there is no user data present on device.

```
Switch#dir all      dior  r all
Directory of flash:/

 2 drwx          192  Mar 1 1993 00:10:08 +00:00 c3750-ipbasek9-mz.122-55.SE5
84 -rwx          107  Mar 1 1993 00:10:08 +00:00 info
85 -rwx         1048  Mar 1 1993 00:01:41 +00:00 multiple-fs

15998976 bytes total (3344384 bytes free)
Directory of system:/

 2 -r--          0      <no date> default-running-config
 4 dr-x          0      <no date> memory
 1 -rw-         2126    <no date> running-config
 3 dr-x          0      <no date> vfiles

No space information available
Directory of tmpsys:/

 6 drw-          0      <no date> eem_lib_system
 5 drw-          0      <no date> eem_lib_user
24 -rw-          0      <no date> eem_pnt_0
26 -rw-          0      <no date> eem_pnt_1
44 -rw-          0      <no date> eem_pnt_10
--More--         46  -rw-          0      <no date> eem_pnt_11
48 -rw-          0      <no date> eem_pnt_12
50 -rw-          0      <no date> eem_pnt_13
52 -rw-          0      <no date> eem_pnt_14
54 -rw-          0      <no date> eem_pnt_15
28 -rw-          0      <no date> eem_pnt_2
30 -rw-          0      <no date> eem_pnt_3
32 -rw-          0      <no date> eem_pnt_4
34 -rw-          0      <no date> eem_pnt_5
36 -rw-          0      <no date> eem_pnt_6
38 -rw-          0      <no date> eem_pnt_7
40 -rw-          0      <no date> eem_pnt_8
42 -rw-          0      <no date> eem_pnt_9
 4 drw-          0      <no date> eem_policy
 8 drw-          0      <no date> eem_pub
23 -rw-          0      <no date> eem_rpc_0
25 -rw-          0      <no date> eem_rpc_1
43 -rw-          0      <no date> eem_rpc_10
45 -rw-          0      <no date> eem_rpc_11
47 -rw-          0      <no date> eem_rpc_12
49 -rw-          0      <no date> eem_rpc_13
51 -rw-          0      <no date> eem_rpc_14
53 -rw-          0      <no date> eem_rpc_15
--More--         27  -rw-          0      <no date> eem_rpc_2
29 -rw-          0      <no date> eem_rpc_3
31 -rw-          0      <no date> eem_rpc_4
33 -rw-          0      <no date> eem_rpc_5
35 -rw-          0      <no date> eem_rpc_6
37 -rw-          0      <no date> eem_rpc_7
39 -rw-          0      <no date> eem_rpc_8
41 -rw-          0      <no date> eem_rpc_9
 7 drw-          0      <no date> eem_temp
 1 dr-x          0      <no date> lib
 9 drw-          0      <no date> macro_scripts

No space information available
Directory of nvram:/

510 -rw-          0      <no date> startup-config
511 ----          0      <no date> private-config

524288 bytes total (523212 bytes free)
```

Figure 5. Initial Device Verification

Writing Data

```
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#int
Switch(config)#interface vlan1
Switch(config-if)#ip address 10.20.41.23 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#exit
Switch(config)#ip default-gateway 10.20.41.1
Switch(config)#exit
Switch#write
*Mar 1 00:02:48.116: %SYS-5-CONFIG_I: Configured from console by console
Building configuration...
[OK]
Switch#copy modem xmodem: flash:ADISA.txt
Destination filename [ADISA.txt]?
Begin the Xmodem or Xmodem-1K transfer now...
C
128 bytes copied in 9.755 secs (13 bytes/sec)
Switch#copy xmodem: flash:ADISA.txt:ADISA.txt :ADISA.txt :ADISA.txt :ADISA.txt :ADISA.txt n:ADISA.txtv:ADISA.txttr:ADISA.txta:ADISA.txtm:ADISA.txt
Destination filename [ADISA.txt]?
Begin the Xmodem or Xmodem-1K transfer now...
C
128 bytes copied in 7.382 secs (17 bytes/sec)
```

Figure 6. Writing Data

Pre-Wipe Verification

```

Switch#dir all
Directory of flash:/

 2 drwx      192 Mar 1 1993 00:10:08 +00:00 c3750-ipbasek9-mz.122-55.SE5
 3 -rwx      2179 Mar 1 1993 00:02:51 +00:00 config.text
84 -rwx      107 Mar 1 1993 00:10:08 +00:00 info
85 -rwx      128 Mar 1 1993 00:03:17 +00:00 ADISA.txt
86 -rwx       24 Mar 1 1993 00:02:51 +00:00 private-config.text
88 -rwx     3096 Mar 1 1993 00:03:33 +00:00 multiple-fs

15998976 bytes total (3338752 bytes free)
Directory of system:/

 2 -r--       0 <no date> default-running-config
 4 dr-x       0 <no date> memory
 1 -rw-     2179 <no date> running-config
 3 dr-x       0 <no date> vfiles

No space information available
Directory of tmpsys:/

 6 drw-       0 <no date> eem_lib_system
 5 drw-       0 <no date> eem_lib_user
--More--      24 -rw-       0 <no date> eem_pnt_0
26 -rw-       0 <no date> eem_pnt_1
44 -rw-       0 <no date> eem_pnt_10
46 -rw-       0 <no date> eem_pnt_11
48 -rw-       0 <no date> eem_pnt_12
50 -rw-       0 <no date> eem_pnt_13
52 -rw-       0 <no date> eem_pnt_14
54 -rw-       0 <no date> eem_pnt_15
28 -rw-       0 <no date> eem_pnt_2
30 -rw-       0 <no date> eem_pnt_3
32 -rw-       0 <no date> eem_pnt_4
34 -rw-       0 <no date> eem_pnt_5
36 -rw-       0 <no date> eem_pnt_6
38 -rw-       0 <no date> eem_pnt_7
40 -rw-       0 <no date> eem_pnt_8
42 -rw-       0 <no date> eem_pnt_9
 4 drw-       0 <no date> eem_policy
 8 drw-       0 <no date> eem_pub
23 -rw-       0 <no date> eem_rpc_0
25 -rw-       0 <no date> eem_rpc_1
43 -rw-       0 <no date> eem_rpc_10
45 -rw-       0 <no date> eem_rpc_11
47 -rw-       0 <no date> eem_rpc_12
--More--      49 -rw-       0 <no date> eem_rpc_13
51 -rw-       0 <no date> eem_rpc_14
53 -rw-       0 <no date> eem_rpc_15
27 -rw-       0 <no date> eem_rpc_2
29 -rw-       0 <no date> eem_rpc_3
31 -rw-       0 <no date> eem_rpc_4
33 -rw-       0 <no date> eem_rpc_5
35 -rw-       0 <no date> eem_rpc_6
37 -rw-       0 <no date> eem_rpc_7
39 -rw-       0 <no date> eem_rpc_8
41 -rw-       0 <no date> eem_rpc_9
 7 drw-       0 <no date> eem_temp
 1 dr-x       0 <no date> lib
 9 drw-       0 <no date> macro_scripts

No space information available
Directory of nvram:/

508 -rw-     2179 <no date> startup-config
509 ----      24 <no date> private-config
 2 -rw-       0 <no date> ifIndex-table
 3 -rw-     128 <no date> ADISA.txt

--More--
524288 bytes total (518961 bytes free)
Switch#

```

Figure 7. Pre-Wipe Verification

Post-Wipe Verification

```

Switch#dir all      dior  r all
Directory of flash:/

  2  drwx          192  Mar 1 1993 00:10:08 +00:00  c3750-ipbasek9-mz.122-55.SES
 84  -rwx          107  Mar 1 1993 00:10:08 +00:00  info
 85  -rwx         1048  Mar 1 1993 00:01:41 +00:00  multiple-fs

15998976 bytes total (3344384 bytes free)
Directory of system:/

  2  -r--          0          <no date>  default-running-config
  4  dr-x          0          <no date>  memory
  1  -rw-         2126       <no date>  running-config
  3  dr-x          0          <no date>  vfiles

No space information available
Directory of tmpsys:/

  6  drw-          0          <no date>  eem_lib_system
  5  drw-          0          <no date>  eem_lib_user
 24  -rw-          0          <no date>  eem_pnt_0
 26  -rw-          0          <no date>  eem_pnt_1
 44  -rw-          0          <no date>  eem_pnt_10
--More--          46  -rw-          0          <no date>  eem_pnt_11
 48  -rw-          0          <no date>  eem_pnt_12
 50  -rw-          0          <no date>  eem_pnt_13
 52  -rw-          0          <no date>  eem_pnt_14
 54  -rw-          0          <no date>  eem_pnt_15
 28  -rw-          0          <no date>  eem_pnt_2
 30  -rw-          0          <no date>  eem_pnt_3
 32  -rw-          0          <no date>  eem_pnt_4
 34  -rw-          0          <no date>  eem_pnt_5
 36  -rw-          0          <no date>  eem_pnt_6
 38  -rw-          0          <no date>  eem_pnt_7
 40  -rw-          0          <no date>  eem_pnt_8
 42  -rw-          0          <no date>  eem_pnt_9
  4  drw-          0          <no date>  eem_policy
  8  drw-          0          <no date>  eem_pub
 23  -rw-          0          <no date>  eem_rpc_0
 25  -rw-          0          <no date>  eem_rpc_1
 43  -rw-          0          <no date>  eem_rpc_10
 45  -rw-          0          <no date>  eem_rpc_11
 47  -rw-          0          <no date>  eem_rpc_12
 49  -rw-          0          <no date>  eem_rpc_13
 51  -rw-          0          <no date>  eem_rpc_14
 53  -rw-          0          <no date>  eem_rpc_15
--More--          27  -rw-          0          <no date>  eem_rpc_2
 29  -rw-          0          <no date>  eem_rpc_3
 31  -rw-          0          <no date>  eem_rpc_4
 33  -rw-          0          <no date>  eem_rpc_5
 35  -rw-          0          <no date>  eem_rpc_6
 37  -rw-          0          <no date>  eem_rpc_7
 39  -rw-          0          <no date>  eem_rpc_8
 41  -rw-          0          <no date>  eem_rpc_9
  7  drw-          0          <no date>  eem_temp
  1  dr-x          0          <no date>  lib
  9  drw-          0          <no date>  macro_scripts

No space information available
Directory of nvram:/

 510 -rw-          0          <no date>  startup-config
 511 ----          0          <no date>  private-config

524288 bytes total (523212 bytes free)

```

Figure 8. Post-Wipe Verification