


# Virtual Edge Platform 1405 Series DIAG OS and Tools Release Notes

Rev. A05  
August 2021

The VEP1405 series of systems consists of the following models:

- VEP1425/VEP1425N
- VEP1445/VEP1445N
- VEP1485/VEP1485N

 **NOTE:** For detailed information about the various system offerings, see the [Virtual Edge Platform 1405 Series Getting Started Guide](#).

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# Document revision history

Table 1. Revision history

Revision	Date	Description
A00	2019-08	Initial release
A01	2020-01	Update of system outputs, and addition of instructions for restoring the system default settings
A02	2020-08	Update to log information within the Important information section, update of Burn DiagOS ISO image to a bootable USB section, and to update the Software requirements section
A03	2020-09	Amendment of DIAG OS, DIAG Tools, Firmware Updater, and BIOS versions to reflect latest software release
A04	2021-07	Update listing of model offerings to include VEP1405N series, and software requirements
A05	2021-08	Update to DIAG Tools version information for ADVA ready software in Table 2

## Software requirements

Table 2. Software requirements

Software	Release version for Configuration 1 (Versa ready)	Release version for Configuration 2 (ADVA ready)
DIAG OS	3.43.3.81-24 (for VEP1405 series) 3.43.3.81-24 (for VEP1405N series)	3.43.3.81-24
DIAG Tools	3.43.4.81-24 (for VEP1405 series) 3.43.4.81-24 (for VEP1405N series)	3.43.4.81-24
Firmware Updater	1.6	1.6

Table 3. Firmware requirements

Firmware	Release version for Configuration 1 (Versa ready)	Release version for Configuration 2 (ADVA ready)
BIOS	3.48.0.9-11 (for VEP1405 series) 3.48.0.9-12 (for VEP1405N series)	3.48.0.9-12
PIC	v20J	v20J
CPLD	v07	v07

## Important information

The following is important information you must know when working with your platform:

### `edatool log` (for Versa ready system configurations)

**NOTE:** The following output is specific for the VEP1405 series of systems that are Versa ready. For detailed configuration information, see the [Virtual Edge Platform 1405 Series Getting Started Guide](#).

```
root@dellemc-diag-os:~# edatool
```

```

*****
*   Diagnostics Application   *
*****
DellEmc Diag edatool version 1.4, package 3.43.4.81-19 2020/05/1
BIOS version:
3.48.0.9-11

CPLD version:
0.7

PIC version:
DellEmc Diag UPDATETOOL - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag phytool - version 1.1 package 3.43.4.81-19 2020/05/14
DellEmc Diag cputool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag fantool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag eepromtool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag gpiotool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag i2ctool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag ledtool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag lpctool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag memtool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag nvramtool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag opticstool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag pcitool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag plttool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag rtctool - version 1.1 package 3.43.4.81-19 2020/05/14
DellEmc Diag smbiostool - version 1.3 package 3.43.4.81-19 2020/05/14
DellEmc Diag storagetool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag temptool - version 2.0 package 3.43.4.81-19 2020/05/14
Testing PCI devices:
+ Checking PCI 00:00.0, ID=19808086 ..... Passed
+ Checking PCI 00:04.0, ID=19a18086 ..... Passed
+ Checking PCI 00:05.0, ID=19a28086 ..... Passed
+ Checking PCI 00:06.0, ID=19a38086 ..... Passed
+ Checking PCI 00:0f.0, ID=19a98086 ..... Passed
+ Checking PCI 00:12.0, ID=19ac8086 ..... Passed
+ Checking PCI 00:13.0, ID=19b28086 ..... Passed
+ Checking PCI 00:15.0, ID=19d08086 ..... Passed
+ Checking PCI 00:16.0, ID=19d18086 ..... Passed
+ Checking PCI 00:17.0, ID=19d28086 ..... Passed
+ Checking PCI 00:18.0, ID=19d38086 ..... Passed
+ Checking PCI 00:1c.0, ID=19db8086 ..... Passed
+ Checking PCI 00:1f.0, ID=19dc8086 ..... Passed
+ Checking PCI 00:1f.2, ID=19de8086 ..... Passed
+ Checking PCI 00:1f.4, ID=19df8086 ..... Passed
+ Checking PCI 00:1f.5, ID=19e08086 ..... Passed
+ Checking PCI 01:00.0, ID=19e28086 ..... Passed
+ Checking PCI 02:00.0, ID=15218086 ..... Passed
+ Checking PCI 02:00.1, ID=15218086 ..... Passed
+ Checking PCI 02:00.2, ID=15218086 ..... Passed
+ Checking PCI 02:00.3, ID=15218086 ..... Passed
+ Checking PCI 04:00.0, ID=003c168c ..... Passed
+ Checking PCI 05:00.0, ID=15c48086 ..... Passed
+ Checking PCI 05:00.1, ID=15c48086 ..... Passed
+ Checking PCI 07:00.0, ID=15e48086 ..... Passed
+ Checking PCI 07:00.1, ID=15e48086 ..... Passed
PCI devices: Overall test results----- >>>> PASSED
Testing I2C devices:Checking I2C devices on bus 0:

+ Checking DDR4 SPD0 0x50 ..... Passed

+ Checking DDR4 SPD1 0x52 ..... Passed

Checking I2C devices on bus 1:

+ Checking CPLD 0x31 ..... Passed

+ Checking PIC 0x2d ..... Passed

+ Checking SYSTEM EEPROM 0x50 ..... Passed

+ Checking Thermal sensor 0x4a ..... Passed

```

```

+ Checking IC Current Monitor 0x40 ..... Passed

+ Checking FAN Controller 0x1b ..... Passed
I2C Devices: Overall test results----- >>>> PASSED
Testing Temp sensor devices:
+ Checking [Sensor 0]      = 39.0 C ..... Passed
Temp Sensors: Overall test results----- >>>> PASSED
PL Tool test:

System CPLD: SFP LED Link Status Register Reg Addr: 0x15 .....Passed
PL Tool: Overall test results----- >>>> PASSED
Fan Controller Short test: Overall test results----- >>>> PASSED
fan1 speed is 8600 RPM
fan2 speed is 8650 RPM
Show Optics in System
Port #   Name           Status   Type      Part Number      Rev   Serial Number
-----
1        SFP 1             REMOVED
2        SFP 2             REMOVED
Testing Memory Regions:
Testing Memory Region 0:
Address Read Test ..... Passed
Address Write Test ..... Passed
Address Walking 1's Test ..... Passed
Address Walking 0's Test ..... Passed
Data Read Test ..... Passed
Data Write Test ..... Passed
Data Walking 1's Test ..... Passed
Data Walking 0's Test ..... Passed
Data Sliding 1's Test ..... Passed
Data Sliding 0's Test ..... Passed
Data Pattern Test ..... Passed
Testing Memory Region 1:
Address Read Test ..... Passed
Address Write Test ..... Passed
Address Walking 1's Test ..... Passed
Address Walking 0's Test ..... Passed
Data Read Test ..... Passed
Data Write Test ..... Passed
Data Walking 1's Test ..... Passed
Data Walking 0's Test ..... Passed
Data Sliding 1's Test ..... Passed
Data Sliding 0's Test ..... Passed
Data Pattern Test ..... Passed
Memory: Overall test results----- >>>> PASSED
MAC Addr Test: Overall test results----- >>>> PASSED
/dev/mmcblk0p2 / ext4Mounted
Filesystem Devices:*****
Diagnostics Application *****
DellEmc Diag edatool version 1.4, package 3.43.4.81-19 2020/05/14

EDA: Overall test results ----- >>> Passed
root@dellemc-diag-os:~#

```

## edatool log (for ADVA ready system configurations)

**NOTE:** The following output is specific for the VEP1405 series of systems that are ADVA ready. For detailed configuration information, see the [Virtual Edge Platform 1405 Series Getting Started Guide](#).

```
root@dellemc-diag-os:~# edatool
```

```

*****
* Diagnostics Application *
*****
DellEmc Diag edatool version 1.4, package 3.43.4.81-19 2020/05/1
BIOS version:
3.48.0.9-11

CPLD version:

```

0.7

PIC version:

```
DellEmc Diag UPDATETOOL - version 2.0 package 3.43.4.81-19 2020/05/14
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DellEmc Diag lpctool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag memtool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag nvramtool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag opticstool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag pitool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag pltool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag rtctool - version 1.1 package 3.43.4.81-19 2020/05/14
DellEmc Diag smbiostool - version 1.3 package 3.43.4.81-19 2020/05/14
DellEmc Diag storagetool - version 2.0 package 3.43.4.81-19 2020/05/14
DellEmc Diag temptool - version 2.0 package 3.43.4.81-19 2020/05/14
```

Testing PCI devices:

```
+ Checking PCI 00:00.0, ID=19808086 ..... Passed
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+ Checking PCI 00:05.0, ID=19a28086 ..... Passed
+ Checking PCI 00:06.0, ID=19a38086 ..... Passed
+ Checking PCI 00:0f.0, ID=19a98086 ..... Passed
+ Checking PCI 00:12.0, ID=19ac8086 ..... Passed
+ Checking PCI 00:13.0, ID=19b28086 ..... Passed
+ Checking PCI 00:15.0, ID=19d08086 ..... Passed
+ Checking PCI 00:16.0, ID=19d18086 ..... Passed
+ Checking PCI 00:17.0, ID=19d28086 ..... Passed
+ Checking PCI 00:18.0, ID=19d38086 ..... Passed
+ Checking PCI 00:1c.0, ID=19db8086 ..... Passed
+ Checking PCI 00:1f.0, ID=19dc8086 ..... Passed
+ Checking PCI 00:1f.2, ID=19de8086 ..... Passed
+ Checking PCI 00:1f.4, ID=19df8086 ..... Passed
+ Checking PCI 00:1f.5, ID=19e08086 ..... Passed
+ Checking PCI 01:00.0, ID=19e28086 ..... Passed
+ Checking PCI 02:00.0, ID=15218086 ..... Passed
+ Checking PCI 02:00.1, ID=15218086 ..... Passed
+ Checking PCI 02:00.2, ID=15218086 ..... Passed
+ Checking PCI 02:00.3, ID=15218086 ..... Passed
+ Checking PCI 04:00.0, ID=003c168c ..... Passed
+ Checking PCI 05:00.0, ID=15c48086 ..... Passed
+ Checking PCI 05:00.1, ID=15c48086 ..... Passed
+ Checking PCI 07:00.0, ID=15e48086 ..... Passed
+ Checking PCI 07:00.1, ID=15e48086 ..... Passed
```

PCI devices: Overall test results----- >>>> PASSED

Testing I2C devices:Checking I2C devices on bus 0:

```
+ Checking DDR4 SPD0 0x50 ..... Passed
+ Checking DDR4 SPD1 0x52 ..... Passed
```

Checking I2C devices on bus 1:

```
+ Checking CPLD 0x31 ..... Passed
+ Checking PIC 0x2d ..... Passed
+ Checking SYSTEM EEPROM 0x50 ..... Passed
+ Checking Thermal sensor 0x4a ..... Passed
+ Checking IC Current Monitor 0x40 ..... Passed
```

```
+ Checking FAN Controller 0x1b ..... Passed
```

I2C Devices: Overall test results----- >>>> PASSED

Testing Temp sensor devices:

```
+ Checking [Sensor 0] = 39.0 C ..... Passed
```

Temp Sensors: Overall test results----- >>>> PASSED

PL Tool test:

```

System CPLD: SFP LED Link Status Register Reg Addr: 0x15 .....Passed
PL Tool: Overall test results----- >>>> PASSED
Fan Controller Short test: Overall test results----- >>>> PASSED
fan1 speed is 8600 RPM
fan2 speed is 8650 RPM
Show Optics in System
Port #   Name           Status   Type     Part Number      Rev   Serial Number
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1        SFP 1             REMOVED
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Testing Memory Regions:
Testing Memory Region 0:
Address Read Test ..... Passed
Address Write Test ..... Passed
Address Walking 1's Test ..... Passed
Address Walking 0's Test ..... Passed
Data Read Test ..... Passed
Data Write Test ..... Passed
Data Walking 1's Test ..... Passed
Data Walking 0's Test ..... Passed
Data Sliding 1's Test ..... Passed
Data Sliding 0's Test ..... Passed
Data Pattern Test ..... Passed
Testing Memory Region 1:
Address Read Test ..... Passed
Address Write Test ..... Passed
Address Walking 1's Test ..... Passed
Address Walking 0's Test ..... Passed
Data Read Test ..... Passed
Data Write Test ..... Passed
Data Walking 1's Test ..... Passed
Data Walking 0's Test ..... Passed
Data Sliding 1's Test ..... Passed
Data Sliding 0's Test ..... Passed
Data Pattern Test ..... Passed
Memory: Overall test results----- >>>> PASSED
MAC Addr Test: Overall test results----- >>>> PASSED
/dev/mmcblk0p2 / ext4Mounted
Filesystem Devices:*****
Diagnostics Application *****
DellEmc Diag edatool version 1.4, package 3.43.4.81-19 2020/05/14

EDA: Overall test results ----- >>> Passed
root@dellemc-diag-os:~#

```

## Bluetooth (for select models only)

```

root@dellemc-diag-os:/opt/dellemc/diag/bin# bttool
[0]: <Info> - 2019-11-27 01:46:32.120469
Port opened at 2019-11-27 01:46:32.120469
-----
[1]: <Rx> - 01:46:32.426286
Type           : 0x04 (Event)
EventCode      : 0xFF (HCI_LE_ExtEvent)
Data Length    : 0x09 (9) (byte(s))
Event         : 0x041B (1051) (HCI_EXT_BuildRevisionCmd)
Status        : 0x00 (0) (SUCCESS)
OpCode        : 0xFC1B (HCI_EXT_BuildRevision)
UserRevNum    : 0x0003 (3)
BuildRevNum   : 0x196E (6510)
Dump (Rx):
04 FF 09 1B 04 00 1B FC 03 00 6E 19

User Revision Number: 0x0003
-----
[2]: <Rx> - 01:46:32.427104
Type           : 0x04 (Event)
EventCode      : 0x0E (HCI_CommandCompleteEvent)
Data Length    : 0x04 (4) (byte(s))

```

```
Packets      : 0x01 (1)
OpCode       : 0x2024 (HCI_LE_WriteSuggestedDefaultDataLenCmd)
Status       : 0x00 (0) (SUCCESS)
Dump (Rx) :
04 0E 04 01 24 20 00
```

```
-----
[3]: <Tx> - 01:46:32.541450
Type         : 0x01 (Command)
OpCode       : 0x0C03 (HCI_Reset)
Data Length  : 0x00 (0) (byte(s))
Dump (Tx) :
01 03 0C 00
```

```
-----
[4]: <Rx> - 01:46:32.549125
Type         : 0x04 (Event)
EventCode    : 0x0E (HCI_CommandCompleteEvent)
Data Length  : 0x04 (4) (byte(s))
Packets      : 0x01 (1)
OpCode       : 0x0C03 (HCI_Reset)
Status       : 0x00 (0) (SUCCESS)
Dump (Rx) :
04 0E 04 01 03 0C 00
```

```
-----
[5]: <Tx> - 01:46:32.594631
Type         : 0x01 (Command)
OpCode       : 0xFE00 (GAP_DeviceInit)
Data Length  : 0x26 (38) (byte(s))
ProfileRole  : 0x0C (Peripheral Central)
MaxScanRsp  : 0x10 (16)
IRK          : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
CRSK        : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
SignCounter  : 0x00000001 (1)
Dump (Tx) :
01 00 FE 26 0C 10 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 01 00 00 00
```

```
-----
[6]: <Rx> - 01:46:32.610528
Type         : 0x04 (Event)
EventCode    : 0xFF (HCI_LE_ExtEvent)
Data Length  : 0x06 (6) (byte(s))
Event        : 0x067F (1663) (GAP_HCI_ExtensionCommandStatus)
Status       : 0x00 (0) (SUCCESS)
OpCode       : 0xFE00 (GAP_DeviceInit)
DataLength   : 0x00 (0)
Dump (Rx) :
04 FF 06 7F 06 00 00 FE 00
```

```
-----
[7]: <Rx> - 01:46:32.611798
Type         : 0x04 (Event)
EventCode    : 0xFF (HCI_LE_ExtEvent)
Data Length  : 0x2C (44) (byte(s))
Event        : 0x0600 (1536) (GAP_DeviceInitDone)
Status       : 0x00 (0) (SUCCESS)
DevAddr      : 00:81:F9:65:4D:C7
DataPktLen   : 0x00FB (251)
NumDataPkts : 0x06 (6)
IRK          : 66:71:D4:36:08:DD:5C:7A:1D:6C:1F:9C:10:AA:04:6A
CRSK        : CE:2D:E5:FF:64:A6:E7:45:26:A5:15:8D:3C:BB:1A:24
Dump (Rx) :
04 FF 2C 00 06 00 C7 4D 65 F9 81 00 FB 00 06 66
71 D4 36 08 DD 5C 7A 1D 6C 1F 9C 10 AA 04 6A CE
2D E5 FF 64 A6 E7 45 26 A5 15 8D 3C BB 1A 24
```

```
-----
[8]: <Tx> - 01:46:32.646563
Type         : 0x01 (Command)
OpCode       : 0xFE07 (GAP_UpdateAdvertisingData)
```

Data Length : 0x0E (14) (byte(s))  
AdType : 0x01 (Advertisement Data)  
DataLength : 0x0C (12)  
AdvertData : 02:01:06:08:08:56:45:50:31:34:30:30  
Dump(Tx):  
01 07 FE 0E 01 0C 02 01 06 08 08 56 45 50 31 34  
30 30

-----  
[9]: <Rx> - 01:46:32.653254  
Type : 0x04 (Event)  
EventCode : 0xFF (HCI\_LE\_ExtEvent)  
Data Length : 0x06 (6) (byte(s))  
Event : 0x067F (1663) (GAP\_HCI\_ExtensionCommandStatus)  
Status : 0x00 (0) (SUCCESS)  
OpCode : 0xFE07 (GAP\_UpdateAdvertisingData)  
DataLength : 0x00 (0)  
Dump(Rx):  
04 FF 06 7F 06 00 07 FE 00

-----  
[10]: <Rx> - 01:46:32.653911  
Type : 0x04 (Event)  
EventCode : 0xFF (HCI\_LE\_ExtEvent)  
Data Length : 0x04 (4) (byte(s))  
Event : 0x0602 (1538) (GAP\_AdvertDataUpdate)  
Status : 0x00 (0) (SUCCESS)  
AdType : 0x01 (1) (Advertisement Data)  
Dump(Rx):  
04 FF 04 02 06 00 01

-----  
[11]: <Tx> - 01:46:32.698541  
Type : 0x01 (Command)  
OpCode : 0xFE06 (GAP\_MakeDiscoverable)  
Data Length : 0x0A (10) (byte(s))  
EventType : 0x00 (Connectable Undirected Advertisement)  
InitAddrType : 0x00 (ADDRTYPE\_PUBLIC)  
InitAddr : 00:00:00:00:00:00  
ChannelMap : 0x07 (07)  
FilterPolicy : 0x00 (Allow Scan Requests From Any, Allow Connect Request From Any)  
Dump(Tx):  
01 06 FE 0A 00 00 00 00 00 00 00 07 00

-----  
[12]: <Rx> - 01:46:32.705181  
Type : 0x04 (Event)  
EventCode : 0xFF (HCI\_LE\_ExtEvent)  
Data Length : 0x06 (6) (byte(s))  
Event : 0x067F (1663) (GAP\_HCI\_ExtensionCommandStatus)  
Status : 0x00 (0) (SUCCESS)  
OpCode : 0xFE06 (GAP\_MakeDiscoverable)  
DataLength : 0x00 (0)  
Dump(Rx):  
04 FF 06 7F 06 00 06 FE 00

-----  
[13]: <Rx> - 01:46:32.705798  
Type : 0x04 (Event)  
EventCode : 0xFF (HCI\_LE\_ExtEvent)  
Data Length : 0x03 (3) (byte(s))  
Event : 0x0603 (1539) (GAP\_MakeDiscoverable)  
Status : 0x00 (0) (SUCCESS)  
Dump(Rx):  
04 FF 03 03 06 00

-----  
[14]: <Tx> - 01:46:32.750968  
Type : 0x01 (Command)  
OpCode : 0xFE36 (GAP\_BondSetParam)  
Data Length : 0x04 (4) (byte(s))  
ParamID : 0x0402 (GAPBOND\_MITM\_PROTECTION)  
ParamLength : 0x01 (1)



```
ParamValue      : 01
Dump(Tx):
01 36 FE 04 02 04 01 01
```

```
-----
[15]: <Rx> - 01:46:32.757019
Type            : 0x04 (Event)
EventCode       : 0xFF (HCI_LE_ExtEvent)
Data Length    : 0x06 (6) (byte(s))
Event          : 0x067F (1663) (GAP_HCI_ExtensionCommandStatus)
Status         : 0x00 (0) (SUCCESS)
OpCode         : 0xFE36 (GAP_BondSetParam)
DataLength     : 0x00 (0)
Dump(Rx):
04 FF 06 7F 06 00 36 FE 00
```

```
-----
[16]: <Tx> - 01:46:32.802238
Type            : 0x01 (Command)
OpCode         : 0xFE36 (GAP_BondSetParam)
Data Length    : 0x04 (4) (byte(s))
ParamID       : 0x0406 (GAPBOND_BONDING_ENABLED)
ParamLength   : 0x01 (1)
ParamValue    : 01
Dump(Tx):
01 36 FE 04 06 04 01 01
```

```
-----
[17]: <Rx> - 01:46:32.808350
Type            : 0x04 (Event)
EventCode       : 0xFF (HCI_LE_ExtEvent)
Data Length    : 0x06 (6) (byte(s))
Event          : 0x067F (1663) (GAP_HCI_ExtensionCommandStatus)
Status         : 0x00 (0) (SUCCESS)
OpCode         : 0xFE36 (GAP_BondSetParam)
DataLength     : 0x00 (0)
Dump(Rx):
04 FF 06 7F 06 00 36 FE 00
```

Welcome to bttool. Please type "help" or "?" to list commands.

```
[bttool]# quit
```

## Wi-Fi (for select models only)

```
root@dellemc-diag-os:~# ath10k.sh
```

```
##### ath10k.sh version (Release Date: 2019/4/17 9:30AM)
#####
```

### 1. Usage

Example:

```
ath10k.sh version
ath10k.sh help
ath10k.sh stop
```

### 2. Configure the wireless interface to Access Point or Wireless Station.

Usage: ath10k.sh [options]

Options:

```
-e [wired           Interface] : ethX (default: eth0)
-i [wireless       Interface] : wlanX (default: wlan0)
-m [wireless       Mode]      : ap/sta (default: ap)
-b [wireless       Band]      : 2.4/5 (default: 5)
-g [wireless       11g Mode]   : on/off (default: on)
-s [Wireless       SSID]      : Strings (Length: expected 1 .. 64)
```

```

(default: VEP1400 5GHz)
-f [Wireless Security] : OPEN/WPA-PSK (default: OPEN)
-p [Wireless Pre-shared Keys] : Strings (Length: expected 8 .. 63)
(default: 12345678)
-r [Supported Rates] : all or xxxx (*1) (in 100 kbps)
(default: all)
-c [Channel ] : 0 (ACS), 2.4GHz: 1 ~ 11, 5GHz: 36 ~ 165
(default: 2.4GHz - 6, 5GHz - 36)
-C [Country Code] : US/DE/FI/FR/PL/TW/JP/xx(*2) (default:
US)
-w [Channel Width] : 0 - 20 or 40 MHz, 1 - 80 MHz (default:
1)
-d [DHCP Client] : on/off/xxx.xxx.xxx.xxx (default: off -
192.168.1.1)
-n [802.11n Capabilities] : on/off/[xxxxx](*3) (default: [HT40+]
[LDPC][SHORT-GI-20][SHORT-GI-40][TX-STBC][RX-STBC1][DSSS_CCK-40])
-a [802.11ac Capabilities] : on/off/[xxxxx](*4)
(default: [MAX-MPDU-11454][RXLDPC][SHORT-GI-80][TX-STBC-2BY1][RX-STBC-1][MAX-A-MPDU-LEN-
EXP7][RX-ANTENNA-PATTERN][TX-ANTENNA-PATTERN])
-t [TX power] : auto/xx (dBm)(default: auto)
-F [Force HT40] : on/off (default: off)
-l [Load ATH10K F/W file] : firmware-X-Y.bin_Z(*5) (Current F/W
Version: 10.2.4-1.0-00041)
-T [Board TX power table] : on/off (CT F/W Only)(default: off)
-D [ATH10K DEBUG MASK] : 0xYYYYYYYY (default: )

```

Note: (Each time you use ath10k.sh to set up your device, you can omit this option setting if the default setting for this option is the one you want to set.)

```

*1 - xxxx: supported_rates - https://wl.fi/cgit/hostap/plain/hostapd/
hostapd.conf
*2 - xx: https://en.wikipedia.org/wiki/
ISO_3166-1_alpha-2#Decoding_table
*3, *4 - [xxxxx]: ht_capab/vht_capab - https://wl.fi/cgit/hostap/plain/
hostapd/hostapd.conf
*5 - firmware-X-Y.bin_Z: (Display the currently available ATH10K
firmware file)
ath10k.sh firmware
ath10k.sh -i wlan2 ..... -l firmware-2-ct-full-
community-21.bin.lede.001

```

#### a. Access Point

- 2.4GHz

```

ath10k.sh [-i (wireless Interface)] -m ap
[-e (wired Interface)] -b 2.4
[-s (Wireless SSID)] [-f
(Wireless Security)]
[-p (Wireless Pre-shared Keys)] [-c (Channel
)]
[-n (802.11n Capabilities)] [-r
(Supported Rates)]
[-d (DHCP Client)] [-C (Country
Code)]
[-t (TX power)] [-F (Force
HT40)]
[-l (Load ATH10K F/W file)] [-g
(Wireless 11g Mode)]
[-T (Board TX power table)]

```

#### Example 1: Configuring the Access Point on

2.4GHz/HT20, Wireless Interface: wlan2 (Default), SSID: VEP1400\_2g, Security: OPEN, DHCP Client: Enable

```

ath10k.sh -i wlan2 -m ap -b 2.4 -n [HT20]
-s VEP1400_2g -f OPEN -d on
or
ath10k.sh -b 2.4 -n [HT20] -s VEP1400_2g -d
on

```

#### Example 2: Configuring the Access Point on

2.4GHz/HT40, Wireless Interface: wlan0, SSID: VEP1400\_2g, Security: OPEN, DHCP Client:

Disable (Static IP address: 192.168.1.1)

```
ath10k.sh -i wlan0 -m ap -b 2.4 -s  
VEP1400_2g -f OPEN -d off -F on  
or  
ath10k.sh -i wlan0 -b 2.4 -s VEP1400_2g -F  
on
```

Example 3: Configuring the Access Point on 2.4GHz/  
11b, Wireless Interface: wlan0, SSID: VEP1400\_2b, Security: OPEN, DHCP Client: Disable  
(Static IP address: 192.168.1.1)

```
ath10k.sh -i wlan0 -m ap -b 2.4 -n off -g  
off -s VEP1400_2b -f OPEN -d off  
or  
ath10k.sh -i wlan0 -b 2.4 -n off -g off -s  
VEP1400_2b  
- 5GHz
```

```
ath10k.sh [-i (wireless Interface)] -m ap  
[-e (wired Interface)] -b 5  
[-s (Wireless SSID)] [-f  
(Wireless Security)]  
[-p (Wireless Pre-shared Keys)] [-c (Channel  
)]  
[-n (802.11n Capabilities)] [-a  
(802.11ac Capabilities)] [-r (Supported Rates)] [-d (DHCP  
Client)]  
[-C (Country Code)] [-t (TX  
power)]  
[-w (Channel Width)] [-l (Load  
ATH10K F/W file)]  
[-T (Board TX power table)]
```

Example 1: Configuring the Access Point  
on 5GHz/HT80, Wireless Interface: wlan0 (Default), SSID: VEP1400\_5g, Security: WPA-PSK,  
Pre-shared Keys: XXXXXXXX, DHCP Client: Disable (Static IP address: 192.168.1.1)

```
ath10k.sh -i wlan0 -m ap -b 5 -s VEP1400_5g  
-f WPA-PSK -p XXXXXXXX -d off  
or  
ath10k.sh -s VEP1400_5g -f WPA-PSK -p  
XXXXXXXX
```

Example 2: Configuring the Access Point on 5GHz/HT40,  
Wireless Interface: wlan1, SSID: VEP1400\_5g, Channel: 157, Security: OPEN, DHCP Client:  
192.168.1.4

```
ath10k.sh -i wlan1 -m ap -b 5 -a off -s  
VEP1400_5g -f OPEN -d 192.168.1.4 -c 157  
or  
ath10k.sh -i wlan1 -a off -s VEP1400_5g -d  
192.168.1.4 -c 157
```

Example 3: Configuring the Access Point on 5GHz/HT20,  
Wireless Interface: wlan2 (Default), SSID: VEP1400\_5g, Channel: 140, Security: OPEN,  
DHCP Client: 192.168.1.2

```
ath10k.sh -i wlan2 -m ap -b 5 -a off -n  
[HT20] -s VEP1400_5g -f OPEN -d 192.168.1.2 -c 140  
or  
ath10k.sh -a off -n [HT20] -s VEP1400_5g -d  
192.168.1.2 -c 140
```

#### b. Wireless Station

```
ath10k.sh [-i (wireless Interface)] -m sta  
[-s (Wireless SSID)] [-f (Wireless  
Security)]  
[-p (Wireless Pre-shared Keys)] [-C (Country  
Code)]
```

```
F/W file)] [-d (DHCP Client)] [-l (Load ATH10K
```

Example 1: Configuring the Wireless station, Wireless Interface: wlan1, AP's SSID: VEP1400\_2g, AP's Security: OPEN, DHCP Client: Enable

```
ath10k.sh -i wlan1 -m sta -s VEP1400_2g -f OPEN -d on
or
ath10k.sh -i wlan1 -m sta -s VEP1400_2g -d on
```

Example 2: Configuring the Wireless station, Wireless Interface: wlan2 (Default), AP's SSID: VEP1400\_5g, AP's Security: WPA-PSK, AP's Pre-shared Keys: XXXXXXXXX, DHCP Client: Enable

```
ath10k.sh -i wlan2 -m sta -s VEP1400_5g -f WPA-PSK -p
XXXXXXXXXX -d on
or
ath10k.sh -m sta -s VEP1400_5g -f WPA-PSK -p XXXXXXXXX
-d on
```

### 3. ATH10K Kernel modules - Remove/Insert/Reload/Install/Uninstall/Probe

```
ath10k.sh module_remove
ath10k.sh module_insert [ATH10K Kernel modules Path]
ath10k.sh module_reload [ATH10K Kernel modules Path]
ath10k.sh module_install [ATH10K Kernel modules Path]
ath10k.sh module_uninstall [ATH10K Kernel modules Path]
ath10k.sh module_probe
```

### 4. ATH10K Shell file (ath10k.sh) - Install/Uninstall

```
ath10k.sh sh_install [Shell file Path]
ath10k.sh sh_install usb sdXY
ath10k.sh sh_uninstall [Shell file Path]
```

### 5. Candela Technologies (CT) Firmware - Install/Uninstall

```
ath10k.sh CT_install [ATH10K Kernel modules Path]
ath10k.sh CT_uninstall
```

### 6. Display the currently available ATH10K firmware file

```
ath10k.sh firmware
```

### 7. Qcubr - Run/Stop

```
ath10k.sh Qcubr
ath10k.sh Qcubr wlanX
ath10k.sh Qcubr_stop
```

### 8. IxChariot Endpoint - Run/Stop/Install/Uninstall

```
ath10k.sh Endpoint
ath10k.sh Endpoint_stop
ath10k.sh Endpoint_install
ath10k.sh Endpoint_uninstall
```

### 9. CRDA Build - init\_crda\_build/backup\_crda\_build/crda\_build\_all/crda\_build\_setup/crda\_build\_only/regdb\_build\_only/crda\_build\_db\_txt

```
ath10k.sh init_crda_build [db.txt Path]
ath10k.sh backup_crda_build [source]
ath10k.sh crda_build_all [db.txt Path]
ath10k.sh crda_build_setup
ath10k.sh crda_build_only
ath10k.sh regdb_build_only [db.txt Path]
ath10k.sh crda_build_db_txt [db.txt Path] [wireless-regdb's source Path]
```

### 10. ATH10K BOARD binary file (board.bin) - Install/Uninstall

```
ath10k.sh board_install [board file Path]
ath10k.sh board_install usb sdXY
ath10k.sh board_uninstall
```

```
11. ATH10K CT power list - Print the maximum power found in any of the diversity columns (tcp_value[0-3])
```

```
ath10k.sh CT_power [phy interface]
```

```
root@dellemc-diag-os:~#
```

## DIAG partition

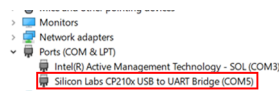
**CAUTION:** When installing an operating system, do not remove the DIAG partition from your hard drive. If you accidentally remove the DIAG partition, see the *DIAG Recovery Guide* at [www.dell.com/support](http://www.dell.com/support).

# BIOS installation and configuration

## Create a serial console connection

To create a serial console connection, perform the following steps:

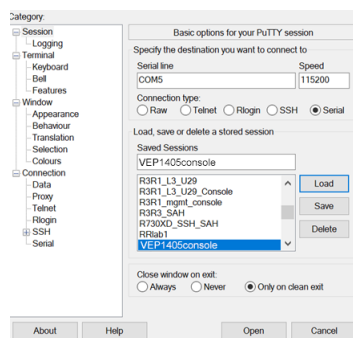
1. Use a micro USB to USB type-A cable to establish a connection between the VEP1405 series micro USB console port and the personal computer.  
**NOTE:** Ensure that you have the driver for the CP210X USB - UART Bridge VCP from Silicon Labs installed. For more information or to download the necessary driver, see <https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>.
2. Check the CP2102 drive communications port using the Microsoft Windows OS Device Manager.



**Figure 1. Microsoft Windows Device Manager**

3. Using a terminal emulator such as PuTTY, locate and configure the serial port that the USB connection represents.
4. In the **Serial** field, enter a connection name.
5. Enter **115200** as the baud rate, in the **Speed** field.
6. Select **Serial** for the **Connection type**.

**NOTE:** To save the selected options for future use, enter a name in the **Saved Sessions** field then click **Save**.



**Figure 2. PuTTY configuration screen**

**NOTE:** COM5 is used only as an example. The actual USB serial port may be different. Use the USB-serial port that corresponds to the VEP serial console connection.

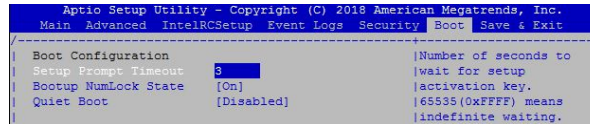
7. Click **Open**.

## BIOS setup

- NOTE:** To enter the Setup Menu, you must enter the required password. By default, this password consists of the system Service Tag number followed by an exclamation point. For example, if the system Service Tag number is A1B2C3D, the default password would be **A1B2C3D!**. If you do not enter a password when prompted, you can still access the Setup Menu, however access to certain functions is restricted.

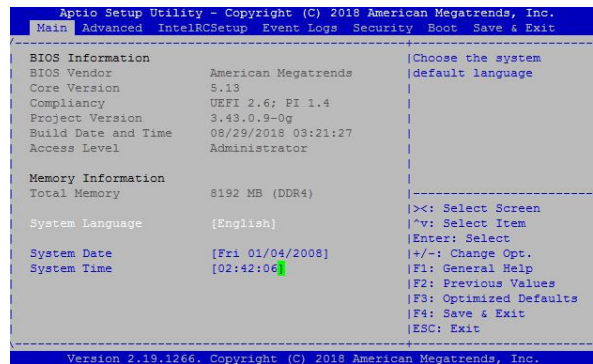
To enter the BIOS setup, perform the following steps:

1. After the system reboots, immediately press the **Delete** key.  
**NOTE:** By default, the ability to enter the BIOS setup once the boot process starts, is set at three seconds.
2. Using the arrow keys on the keyboard, select the **Boot** tab.



**Figure 3. Dell EMC VEP1405 setup prompt timeout screen**

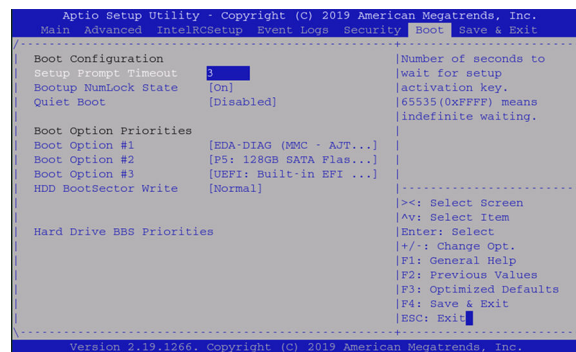
3. From the **Setup Prompt Timeout** field, use the keyboard to enter the time.
4. Press **F4** to save the changes made.
5. Using the arrow keys, select the **Main** tab.



**Figure 4. Dell EMC VEP1405 BIOS main screen**

## Boot order

The BIOS looks for a bootable image in the Boot order setting list. The BIOS then loads and boots the image. To access the boot order setting from the **BIOS setup** screen, select the **Boot** tab, and then select **Boot Option Priorities**.



**Figure 5. Example of VEP1425 system boot order screen**

## USB 3.0

To support universal serial bus (USB) 3.0 in operating systems, set the extensible host controller interface (xHCI) **XHCI Hand-off** option to **enabled**. To adjust this setting, access the BIOS setup screen and use the arrow keys to select the **Advanced** tab, and then select **USB Configuration**.

**NOTE:** If the BIOS must support USB 2.0 devices, or legacy USB devices, leave the **Legacy USB Support** set to **Enabled**.

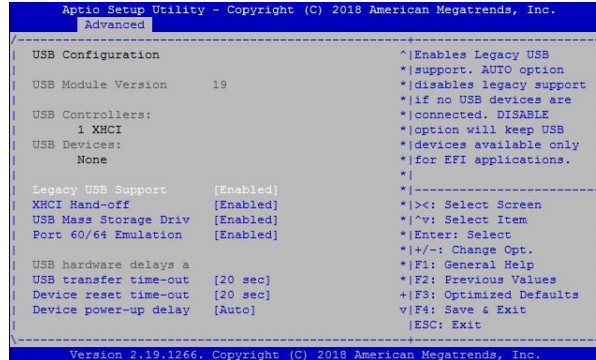


Figure 6. USB 3.0 settings

Because the system is connected using the universal asynchronous receiver-transmitter (UART) console, a traditional keyboard or mouse is not connected to the USB ports.

## Network interface configuration

- Two small form-factor pluggable (SFP) or SFP+ ports that support the following configurations:
  - 10 G SFP+ optics
  - 1 G, only with Intel Dual Speed 10/1 G Optic on SFP+ ports
  - Regular 1 G SFP
- Six ports 10/100/1000MBase-T Ethernet

## Trusted computing

The BIOS provides options to enable or disable trusted platform module (TPM) security. The BIOS has two provision coverage ratio (PCR) banks and provides options to select SHA-1 or SHA256 for these banks. From the BIOS setup screen, use the arrow keys to select the **Advanced** tab, and then select **Trusted Computing BIOS settings**.

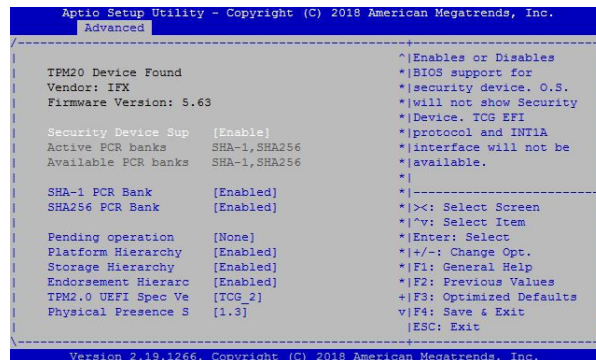


Figure 7. Trusted computing BIOS setting

## POST test

From the BIOS setup screen, use the arrow keys to select the **Advanced** tab, and then select **POST test**.

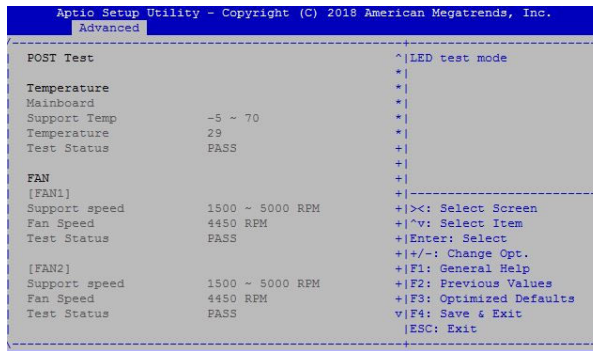


Figure 8. POST test

## LED test

Within **Test** mode, the **LED test** option allows you to select the color of the system LED lights on the front panel:

- None
- Green
- Yellow

To adjust these settings, go to the **BIOS setup** screen, use the arrow keys to select the **Advanced** tab, select **POST test**, and then select the **LED test** option.

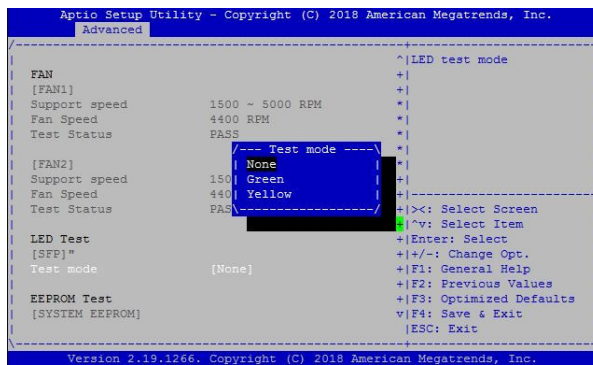


Figure 9. LED test screen

## Restore defaults

**NOTE:** By restoring the system to the original default settings, any assigned system passwords will be restored to the original default password. See the **BIOS setup** section in this document for information about the original default password.

To restore the system to the original default settings:

1. From the BIOS setup screen, use the arrow keys to select the **Save & Exit** tab.
2. Use the arrow keys to select the **Restore Defaults** option and press **Enter**. The **Load Optimized Defaults?** screen displays.



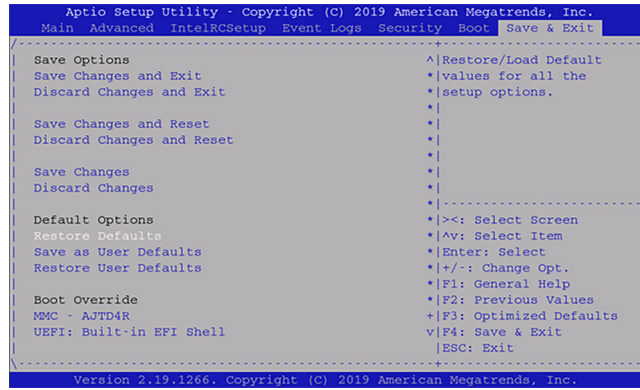


Figure 10. Restore system defaults screen

3. Select **Yes** and press **Enter**.

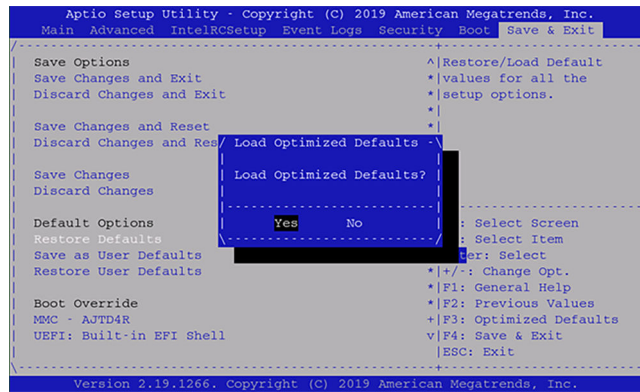


Figure 11. Confirm default settings restoration window

## VEP1405 diagnostic operating system installation

The installation of the VEP1405 diagnostic operating system supports the following installation procedure:

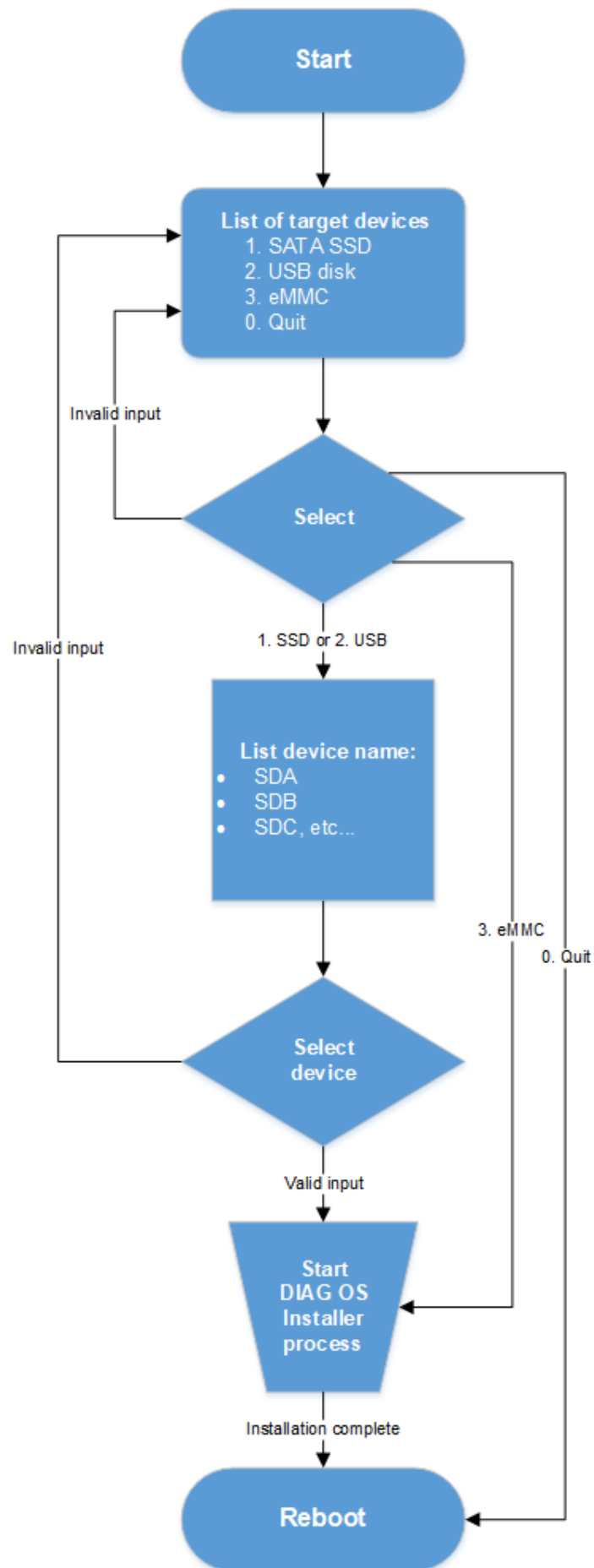


Figure 12. VEP1405 diagnostic operating system installation process

# Restore to Manufacture DIAG OS

Manufacture DIAG OS recovery for the VEP1405 series of systems.

## Burn DIAG OS ISO image to a bootable USB

**NOTE:** Dell Technologies recommends you use Rufus to create the bootable USB drive. To download the latest version of Rufus, see <https://rufus.ie/>.

1. Mount the USB flash drive to a Linux computer or VEP1405 with DIAG OS.
2. Log in to the Linux OS.
3. Download the DIAG OS ISO image to the Linux computer using FTP, SCP, or a similar protocol.
4. Use the following Linux command to create a bootable DIAG OS installation USB flash drive:

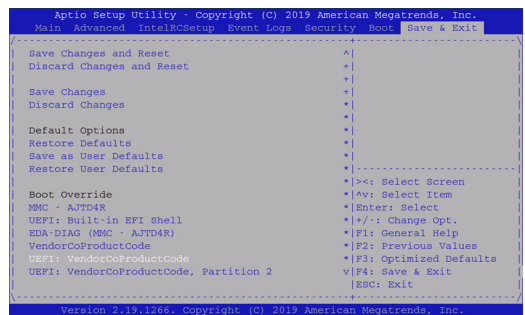
```
#dd if=diagos-recovery-x86_64-dellemc_vep1400_c3538-r0.3.43.3.81-19.iso of=/dev/sd<x> bs=1M
```

**NOTE:** When using the `/dev/sd<x>` command, `<x>` represents the device location where the USB is plugged in to the system. For example, the location information could be `sda`, `sdb`, or `sdc`.

**NOTE:** To view the devices, you can use the `sdlsblk` or `df` commands.

## Configure BIOS to install DIAG OS from USB

1. Select the **Save & Exit** menu tab.
2. Using the arrow keys, navigate to the **Boot Override** section and highlight **UEFI: <device name>**.



**Figure 13. Save & Exit tab**

3. Press **Enter** to select the correct UEFI device. The installation begins after the system reboots.

```
Booting `VEP1400 DiagOS Install'

Platform : x86_64-dellemc_vep1400_c3538-r0
Version : 3.43.3.81-19
Build Date: 2020-07-21T01:30-0700
AF,

DXE_EXIT_BOOT_SERVICES(03101019)
B B Info: Mounting kernel filesystems... done.
starting to install vep1400 DiagOS
discover: Rescue mode detected. No discover stopped.
[ 15.136240] sd 6:0:0:0: [sdb] No Caching mode page found
[ 15.141703] sd 6:0:0:0: [sdb] Assuming drive cache: write through
ONIE: Executing installer: /diag-installer-x86_64-dellemc_vep1400_c3538-
r0-3.43.3.81-19-2020-07-21.bin
Ignoring Verifying image checksum ... OK.
cur_dir / archive_path /var/tmp/installer tmp_dir /tmp/tmp.Wbh82E
Preparing image archive ...sed -e '1,/^\exit_marker$/d' /var/tmp/installer | tar xf -
OK.
Diag-OS Installer: platform: x86_64-dellemc_vep1400_c3538-r0
```

```

platform found vep1400
platform vep1400 is supported.
console port ttyS0

*****
Select Installation Device
*****
1.SSD
2.USB Disk
3.eMMC
0.Quit
-----
Please select the device type that DIAG OS will be install on : 3
Install Diag OS on eMMC
Checking device /dev/mmcblk0 size...
ok
ls: /boot/efi/EFI/*: No such file or directory
Found EDA-DIAG partition on device /dev/mmcblk0p2
File /tmp/diag_os_install_mode exists, forcing install mode
Diag OS Installer Mode : INSTALL

Installing diag-os on mmc device
Checking mmc device presence...
ok
Initializing mmc device
Clearing GPT and MBR data structures
GPT data structures destroyed! You may now partition the disk using fdisk or
other utilities.
Clearing GPT and MBR data structures...ok

creating GPT disk label
Creating new GPT entries.
The operation has completed successfully.
creating GPT disk label...ok

Creating ESP on partition 1. size 128MB with label EFI System
Creating ESP on partition...ok

Creating file-system(vfat) on esp device /dev/mmcblk0p1 with label EFI System
mkfs.fat: warning - lowercase labels might not work properly with DOS or Windows
mkfs.fat 3.0.26 (2014-03-07)
Creating file-system(vfat) on esp...ok

Creating diags partition 2 size 2048MB with label EDA-DIAG
Creating diags partition...ok
Creating file-system on diags partition
mke2fs 1.42.13 (17-May-2015)
Discarding device blocks: done
Creating filesystem with 524288 4k blocks and 131072 inodes
Filesystem UUID: cb4b61a0-75c4-429d-ae5d-26aed0ffdf11
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912

Allocating group tables: done
Writing inode tables: done
Creating journal (16384 blocks): done
Writing superblocks and filesystem accounting information: done

Creating file-system on diags partition...ok

Mounted /dev/mmcblk0p2 on /tmp/tmp.f01Ji8

Preparing /dev/mmcblk0p2 EDA-DIAG for rootfs install
untaring into /tmp/tmp.f01Ji8

rootfs copy done
Success: Support tarball created: /tmp/tmp.f01Ji8/onie-support-
dellemc_vep1400_c3538.tar.bz2
Updating diag-os ver in system-EEPROM
Diags ver 3.43.3.81-19
Deleting TLV 0x2e: Diag Version
Adding TLV 0x2e: Diag Version

```

```

Programming passed.
TlvInfo Header:
  Id String:    TlvInfo
  Version:     1
  Total Length: 208
TLV Name      Code Len Value
-----
Part Number   0x22  6 0VRJYC
Serial Number 0x23  20 TW0VRJYCDNT0097U0152
Base MAC Address 0x24  6 50:9A:4C:EA:3F:B0
Manufacture Date 0x25  19 07/31/2019 12:12:57
Device Version 0x26  1 1
Platform Name 0x28  22 x86_64-dellemc_vep1485
ONIE Version  0x29  12 3.43.3.81-15
MAC Addresses 0x2A  2 64
Country Code  0x2C  2 TW
Vendor Name   0x2D  8 Dell EMC
Service Tag   0x2F  7 6GXFXC2
Vendor Extension 0xFD  21 0x00 0x00 0x02 0xA2 0x20 0x16 0x3A 0x80 0xDC 0x41 0xAE
0x48 0x3A 0x84 0x2E 0xDA 0x65 0x66 0x04 0xC5 0xE7
Product Name  0x21  13 VEP-14x5-V930
Manufacturer  0x2B  17 DELL-MANUFACTURER
Label Revision 0x27  2 V2
Diag Version  0x2E  12 3.43.3.81-19
CRC-32        0xFE  4 0x3EE060D6
Checksum is valid.
[VEP1400-X] Board ID : 0x0b
rootfs install ok

Mounted /dev/mmcblk0p1 on /tmp/tmp.qsoZQU

Installing grub for diag-os
done
Updating EFI NVRAM Boot variables...
done

Updating Grub Cfg /dev/mmcblk0p2
clean up..done

INSTALLER DONE...
Please uninstall your USB disk out of box, wait 2 sec
Removing /tmp/tmp.Wbh82E
ONIE: NOS install successful: /diag-installer-x86_64-dellemc_vep1400_c3538-
r0-3.43.3.81-19-2020-07-21.bin
ONIE: Rebooting...
This should be not reachable unless something wrong is there!!!!
Info: BIOS mode: UEFI
Info: Using eth0 MAC address: 50:9a:4c:ea:3f:b0
Info: eth0: Checking link... down.
ONIE: eth0: link down. Skipping configuration.
ONIE: Failed to configure eth0 interface
Starting: klogd... done.
discover: Rescue mode detected. No discover stopped.
Stopping: dropbear ssh daemon...done.
Stopping: telnetd... done.
Stopping: klogd... done.
Stopping: syslogd... done.
Info: Unmounting kernel filesystems
umount: can't unmount /: Invalid argument
The system is going down NOW!
Sent SIGTERM to all processes
Sent SIGKILL to all processes
Requesting system reboot

[ 209.095358] reboot: Restarting system
11, 32, 15, 00068001, 19, 00068000,

BIOS Boot Selector for VEP1400-X
Version 3.48.0.9-11

POST Configuration

```

```

CPU Signature 506F1
CPU FamilyID=6, Model=5F, SteppingId=1, Processor=0
Microcode Revision 2E
Platform ID: 0x0
PMG_CST_CFG_CTL: 0x37
Misc EN: 0x840089
Gen PM ConA: 0xA0A00200
Therm Status: 0x8000000
POST Control=0xEA000301, Status=0xE600DF00

```

BIOS initializations...

CPGC Memtest Channel 0 ..... PASS

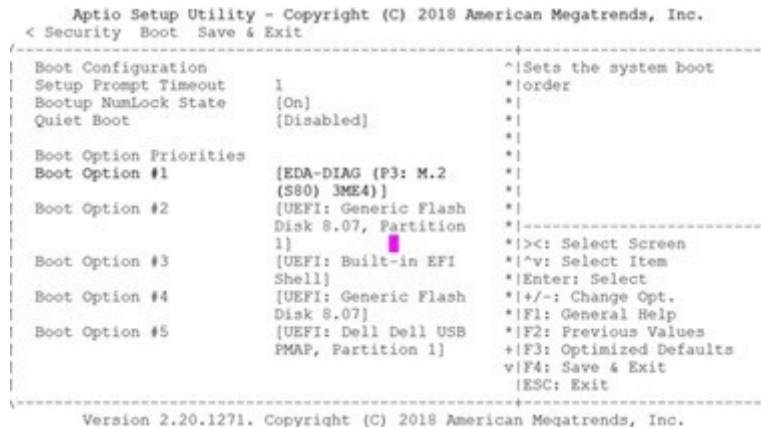
CPGC Memtest Channel 1 ..... PASS

4. During the installation process, select **eMMC** rather than SSD for the installation of the diagnostics partition.

## Configure BIOS and boot into DIAG OS

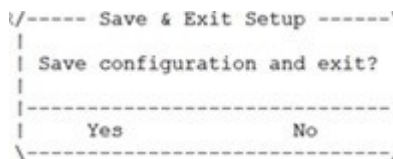
After the DIAG OS installation completes, configure the BIOS then boot into the DIAG OS.

1. Boot into the BIOS setting.
2. Configure **Boot Option #1** from the **Boot Configuration** screen.



**Figure 14. Boot configuration screen**

3. Press the **F4** key to save the changes and exit the utility.
4. Confirm saving the configuration using the left and right arrow keys, and exit from the utility. Select **Yes** and press **Enter**.



**Figure 15. Save & exit**

After you save the changes the log in command prompt displays.

```

Starting Getty on tty2...
[ OK ] Started Getty on tty2.
Starting Getty on tty1...
[ OK ] Started Getty on tty1.
Starting Serial Getty on ttyS0...
[ OK ] Started Serial Getty on ttyS0.
Starting Getty on tty3...
[ OK ] Started Getty on tty3.
Starting Getty on tty4...
[ OK ] Started Getty on tty4.
Starting Getty on tty5...
[ OK ] Started Getty on tty5.
Starting Getty on tty6...
[ OK ] Started Getty on tty6.
[ OK ] Started getty on tty2-tty6 if dbus and logind are not available.
[ OK ] Reached target Login Prompts.
[ OK ] Reached target Multi-User System.
[ OK ] Reached target Graphical Interface.
Starting Update UTMP about System Runlevel Changes...
[ OK ] Started Update UTMP about System Runlevel Changes.

Debian GNU/Linux 8 dellemc-diag-os ttyS0
dellemc-diag-os login: █

```

**Figure 16. Log in command prompt**

- To log in, enter the following user and password information:

```
root/calvin
```

## DIAG OS verification

**NOTE:** The system shows the current version.

After DIAG OS installation is complete, reboot the system and boot into the DIAG OS.

- Log in into the DIAG OS using `root` as the username and `calvin` as the password.
- Enter the `sh_ver` command.

## Update BIOS, CPLD, and PIC firmware using firmware updater package

The VEP1405 series firmware updater package provides you with the ability to update the BIOS, CPLD, and PIC firmware.

**NOTE:** This firmware updater package can be used to update the BIOS, CPLD, and PIC firmware on the CentOS, Debian 9.8/9.9, Ubuntu18.04, and Versa operating system platforms.

To update the firmware on the VEP1405 series system, perform the following steps:

- Download the Unified Firmware Updater (UFW) from the Dell support site and unzip the `vep1400x_ufw_1.6.zip` file to obtain the **vep1400x\_ufw\_1.6 (Unified Firmware Updater)** script.
- Insert the external USB flash drive into a USB port on the VEP1405 series system.

**NOTE:** If the SSD is `/dev/sda`, the USB commonly appears as `/dev/sdb`.

```
root@dellemc-diag-os:~# ls /dev/sd*
/dev/sda /dev/sda1 /dev/sda2 /dev/sdb /dev/sdb1
root@dellemc-diag-os:~#
```

- From a Microsoft Windows or Linux server, copy the `vep1400x_ufw_1.6` image to an external USB flash drive

**NOTE:** A 2GB or greater, external USB flash drive is recommended.

```
root@dellemc-diag-os:~# mkdir /mnt/usb
```

- Mount the external USB drive to the newly created directory.

**NOTE:** If your USB drive is partitioned, make note of which partition to mount.

The following example shows how to mount on a partition:

```
root@dellemc-diag-os:~# mount /dev/sdb /mnt/usb
mount: /dev/sdb is write-protected, mounting read-only
root@dellemc-diag-os:~# ls /mnt/usb    boot  initrd.xz  vmlinuz
root@dellemc-diag-os:~# umount /mnt/usb
root@dellemc-diag-os:~# mount /dev/sdb1 /mnt/usb
root@dellemc-diag-os:~# ls /mnt/usb    EFI
root@dellemc-diag-os:~# cd /mnt/usb
```

5. Copy the vep1400x\_ufw\_1.6 image from the /mnt/usb directory to the root directory on the VEP1405 series system.
6. After the files have been copied, unmount the USB.
7. Run the firmware updater using the following command:

- To **automatically** update the BIOS, CPLD, and PIC firmware, run the following command:

```
root@dellemc-diag-os:~# ./vep1400x_ufw_1.6
```

- To **manually** update the BIOS, CPLD, and PIC firmware, run the following command:

```
root@dellemc-diag-os:~# ./vep1400x_ufw_1.6 interactive
```

The following is an example of performing the manual update of the BIOS, CPLD, and PIC firmware using the vep1400x\_ufw\_1.6 image on the VEP1405 series of systems:

```
root@dellemc-diag-os:~# ./vep1400x_ufw_1.6 interactive
Creating directory temp
Verifying archive integrity... 100% MD5 checksums are OK. All good.
Uncompressing release 100%
firmware_updater/
firmware_updater/firmwares/
firmware_updater/firmwares/VEP1400-X-BIOS-3.48.0.9-11.bin
firmware_updater/firmwares/vep1400-x_cpld_v07_20191030.vme
firmware_updater/firmwares/N1406-PIC_App_V20J_190731.bin
firmware_updater/common_tools/
firmware_updater/common_tools/updatetool
firmware_updater/common_tools/pltool
firmware_updater/common_tools/nvramtool
firmware_updater/common_tools/i2ctool
firmware_updater/common_tools/gpiotool
firmware_updater/common_tools/vmetool
firmware_updater/common_tools/configs/
firmware_updater/common_tools/configs/default_gpio_list.xml
firmware_updater/common_tools/configs/default_vme_list.cfg
firmware_updater/common_tools/configs/default_update_device.xml
firmware_updater/common_tools/configs/default_nvram_list.xml
firmware_updater/common_tools/configs/default_pl_list.xml
firmware_updater/common_tools/configs/default_i2c_devices.xml
firmware_updater/common_tools/amifu
firmware_updater/common_tools/libs/
firmware_updater/common_tools/libs/libdiag_util.la
firmware_updater/common_tools/libs/libxml2.so.2.9.1
firmware_updater/common_tools/libs/libdiag_util.a
firmware_updater/common_tools/libs/libstdc++.so.6.0.20
firmware_updater/common_tools/libs/libdiag_util.so.0.0.0
firmware_updater/common_tools/flashrom
firmware_updater/common_tools/dmidecode
firmware_updater/install.sh
firmware_updater/lib_setup.sh
firmware_updater/firmware.files
firmware_updater/os/
firmware_updater/os/centos/
firmware_updater/os/centos/centos_init.sh
firmware_updater/os/versa/
firmware_updater/os/versa/driver/
firmware_updater/os/versa/driver/i2c-ismt.ko
firmware_updater/os/versa/versa_init.sh
firmware_updater/os/debian/
firmware_updater/os/debian/driver/
firmware_updater/os/debian/driver/9.9/
firmware_updater/os/debian/driver/9.9/amifldr_mod.o
firmware_updater/os/debian/driver/10.2/
```



```

firmware_updater/os/debian/driver/10.2/amifldrv_mod.o
firmware_updater/os/debian/driver/9.8/
firmware_updater/os/debian/driver/9.8/amifldrv_mod.o
firmware_updater/os/debian/driver/10.0/
firmware_updater/os/debian/driver/10.0/amifldrv_mod.o
firmware_updater/os/debian/debian_init.sh
firmware_updater/os/ubuntu/
firmware_updater/os/ubuntu/ubuntu_init.sh
~/temp ~/temp

===== VEP1400-X Firmware Updater Package =====

Package version: 1.6
Packaged images:
  BIOS image version: 3.48.0.9-11
  CPLD image version: 0x07
  PIC image version: v20J

[The Selections]
1. Automatically update all firmware components
2. Update BIOS image [Running version: 3.48.0.9-10]
3. Update CPLD image [Running version: 0x7]
4. Update PIC image [Running version: v20J]
5. Update BIOS image with NVRAM update [Running version: 3.48.0.9-10]
q. Exit

Enter your choice: 1

===== Update ALL Images =====
PIC is in AppCode now.
To update the PIC firmware, it first needs to reboot to enter the BootCode.
(please run VEP1400-X firmware updater again to continue the update after reboot)
After the update is completed, PIC will automatically re-enter AppCode and
reboot again.
Do you want to continue (y\n): y

```

**i** **NOTE:** CPLD versions prior to v0.6 will encounter instances where the update continuously scrolls the output. If you encounter this occurrence, reboot the VEP1405 series system and re-run the UFW update steps provided in this section.

8. After the firmware upgrade is complete, enter **q** to exit.
9. Once the firmware updates are complete, a system power cycle is required. You can power cycle the system using the remote power cycle, or by manually disconnecting then reconnecting the power cord.

## Support resources

The following support resources are available for the VEP1405:

## Documentation resources

This document contains operational information specific to the VEP1405 series platforms.

For information about using the VEP1405 series platforms, see the following documents at [www.dell.com/support](http://www.dell.com/support):


- *Dell EMC Networking Virtual Edge Platform (VEP) 1405 Series Getting Started Guide*
- *Dell EMC Networking Virtual Edge Platform (VEP) 1405 Series Release Notes*
- *Dell EMC Networking Virtual Edge Platform (VEP) 1405 Series Software Installation Guide*

For more information about hardware features and capabilities, see the Dell EMC website at [www.dell.com/networking](http://www.dell.com/networking).

## Contacting Dell EMC

Dell EMC provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell EMC for sales, technical support, or customer service issues, go to <https://www.dell.com/support/>.

## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.