DCMI Conformance Test Suite
(DCTS for Linux)
User Guide

Rev 1.5.0.31
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1. Glossary of Terms

This document uses the following terms and abbreviations:

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>DCMI</td>
<td>Data Center Management Interface</td>
</tr>
<tr>
<td>DCTS</td>
<td>DCMI Conformance Test Suite</td>
</tr>
<tr>
<td>FW</td>
<td>Firmware</td>
</tr>
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<td>IB</td>
<td>In Band</td>
</tr>
<tr>
<td>IOL</td>
<td>IPMI over Lan</td>
</tr>
<tr>
<td>IPDC</td>
<td>Internet Portal Data Center</td>
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<tr>
<td>IPMI</td>
<td>Intelligent Platform Management Interface</td>
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<tr>
<td>KCS</td>
<td>Keyboard Controller Style</td>
</tr>
<tr>
<td>MC</td>
<td>Management Console</td>
</tr>
<tr>
<td>NIC</td>
<td>Network Interface Card</td>
</tr>
<tr>
<td>NM</td>
<td>Node Manager</td>
</tr>
<tr>
<td>OEM</td>
<td>Original Equipment Manufacturer</td>
</tr>
<tr>
<td>OOB</td>
<td>Out of Band</td>
</tr>
<tr>
<td>OS</td>
<td>Operating System</td>
</tr>
<tr>
<td>RMCP</td>
<td>Remote Management Control Protocol</td>
</tr>
<tr>
<td>SDR</td>
<td>Sensor Data Record</td>
</tr>
<tr>
<td>SEL</td>
<td>System Event Log</td>
</tr>
<tr>
<td>TBD</td>
<td>To Be Determined</td>
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<tr>
<td>TCP/IP</td>
<td>Transmission Control Protocol/Internet Protocol</td>
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<td>TMode</td>
<td>Terminal Mode</td>
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<td>UUT</td>
<td>Unit Under Test</td>
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2. Introduction

2.5 Scope and Purpose

This document covers operational procedures, configuration and setup needed to run the DCMI conformance test suite (DCTS).

Please note that currently DCTS covers the functionality of the DCMI specification: 1.1 and 1.5

2.6 Audience

This document is intended for use by Validation Engineers, Program/Project Managers and Development Engineers to test DCMI compliance. It is assumed that the reader has a background in Server manageability and DCMI.

2.7 Location of this Document

Updates to the user document can be obtained from the following link: http://www.intel.com/technology/product/DCMI/index.htm

2.8 Change History

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<td>16/12/2011</td>
<td>1.5.00.027</td>
<td>Hot fix for Sensor Discovery</td>
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<tr>
<td>13/02/2012</td>
<td>1.5.00.030</td>
<td>Hot fix for Session info</td>
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<tr>
<td></td>
<td></td>
<td>Added missed Test for User payload access</td>
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<tr>
<td>29/02/2012</td>
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DCTS 1.1 Change History

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<td>2.3</td>
<td>Fixed: - SHA256 Truncation</td>
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<td>- Cipher Suite Entries invalid response data size expectation – result</td>
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<td></td>
<td></td>
<td>the test failed, if there was listed all allowable entries</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Fixed messages for optional features:</td>
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<tr>
<td></td>
<td></td>
<td>- SEL Roll over</td>
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<td></td>
<td></td>
<td>- Optional Platform Attributes</td>
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<td></td>
<td></td>
<td>- Enhanced System Power Statistics Attribute</td>
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<td></td>
<td></td>
<td>- Changes in the delays for SEL Entries test cases</td>
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3. DCMI Conformance Suite Overview

3.1 General Description

The DCMI Conformance Test Suite (DCTS) provides a baseline set of tests for verifying compliance with the Data Center Management Interface (DCMI) specification (in both version 1.1 and 1.5). DCTS is designed to perform “Black Box” testing, wherein the focus is solely on the outputs generated in response to selected inputs and execution conditions. The primary objectives of the test suite are:

1. Reduce ambiguity in the specifications interface description.
2. Increase customer’s confidence in interoperability between different implementations.
3. Identify which parts of the specification have been implemented.
4. Help implementers and users understand how the DCMI interfaces are expected to be called.

DCTS presents a simple menu driven user interface. Each test scenario verifies a logical unit of functionality and reports a pass, a fail or a skipped. A cross reference of tests to DCMI specification references can be viewed in Appendix B.

Based on the method chosen for communication with the target system, the following two modes of testing are supported.

- **In-Band Testing (IB)**
  - Using KCS or HECI Interface
  - The test tool resides on the Server Platform (UUT)

- **Out-of-Band Testing (OOB)**
  - Using Ethernet LAN based connectivity via IPMI/RMCP+
  - The test tool resides on the remote PC.

3.2 Software Components

The package is distributed as a self extracting executable; it contains the files listed below:

- **DCMIConformance** main engine that serves as the
  - menu driver for user Input/Output
  - send, receive and process the commands.
  - report results

- **TransportInBand.la** In-band driver component via KCS and HECI

- **TransportRMCP.la** Out-of-band driver component.

- **userconf.cfg** Text file for configuring the user and network environment.

- **DCTS_Linux_ReleaseNotes.txt** Text file that has the release information.
3.3 Userconf.cfg

The basic network and session configuration for the test environment is extracted from the file “UserConf.cfg”. Please note this is a text file and it is modeled after the “.INI file that is commonly used in the Windows environment. A complete list of parameters along with default values are listed in the sample user config file in Appendix A.
4. Usage Pre-Requisites

All the prep-work listed in this section should be completed before starting the actual test run.

4.1 Installation

1. **Extract the DCMI_Conformance.tar file into the Linux machine**
   - For OOB application install on your client PC.
   - For IB application install on the UUT or Target Server.
   - Obtain, install, and configure on the client PC/Server any utility that will allow you to view the TCP/IP packets that will need to be observed during the platform DHCP discovery operation.

2. **Build the executable**
   - cd /source
   - make clean
   - make distclean
   - autoreconf . libltdl -v
   - ./configure
   - make
   - make install

3. **Copy all the libraries to the bin directory**
   - cd /usr/local/bin
   - cp /usr/local/lib/*. *
   - cp /usr/local/etc/*. *

4. **Copy userconf.cfg file to /usr/local/bin**
   Make sure to update the username and targetIP to match your BMC settings.

5. **Run the executable DCMI_Conformance**
4.2 Out-of-Band testing

4.2.1 Network Connectivity & IPMI Session Configuration

It is assumed that the user is familiar with the tools and procedures to configure the server manageability stack on the UUT.

- The Manageability Controller should be configured for IP connectivity, this implies IP address and ensuring there is IP based network connectivity between the UUT and the host PC.
- The test is intended to run in a one-to-one configuration. It is not meant to run on a network with significant network traffic.

- A set of usernames and passwords with admin privilege should be configured on the server as part of BMC provisioning
4.2.2 DCTS Configuration

The recommended values for testing are shown below.

```
[DCMI_Conformance]
# screen-output
screen-output=summary

# log-to-file
log-to-file=summary

# log-file-name
log-file-name=results.log

[RMCPP]
# Target IP of UUT (assigned to FW)
targetIP=xxx.xxx.xxx.xxx

# User Name
username=username

#Cipher Suite
CipherSuite=3

[TimeOutValues]
TimeOutPwrOn=15
TimeOutPwrOff=30
TimeOutLedBlink=15
TimeOutSELReserve=1
TimeOutSELGet=1
TimeOutSELClear=1
```

4.2.3 DHCP/DCMI Discovery

1. This test is in support of Test Case 13.1 of the DCMI Conformance Test Suite.
2. This test assumes that the user will be using DHCP for the target server.
3. Start the packet sniffing tool and insure you are reading from the test network port that is connected to your test network.
4. DC cycle the UUT to off.
5. Cycle AC power off for about 30 seconds.
6. Cycle AC power on.
7. Immediately after AC power on, use the packet capture tool to capture the initial DHCP discovery packet and verify the DHCP host name.
8. Take note that the host name as this will not be requested in the test execution but it is recommended to verify it.
4.3 In-Band testing

4.3.1 Driver Installation

In the case of In-Band testing the driver needs to be installed. The steps are listed below:

- **KCS based**: IPMI driver should be available in the Linux kernel for communication. The User will need to reinstall if the UUT is rebooted
  - Execute `<modprobe ipmi_msghandler>`
  - Execute `<modprobe ipmi_devintf>`
  - Execute `<modprobe ipmi_Si>`

- **HECI based platform**: Please refer to the HECI and DCMI-HI (formerly IDC-HI) readme files.
5. Test Execution

1. Change to /usr/local/bin on the Client PC if executing OOB or on the UUT if running IB.
2. Verify if running OOB that the UUT is turned on and booted to the OS.
3. Run DCMI_Conformance and the menu will open as shown in the screen shot below.

Please notice that currently DCTS is supporting both DCMI specification versions: 1.1 and 1.5, so please select appropriate options.
NOTE: At various times the test will delay. You may see the prompt; “Delay for: X s”\(^1\). This is primarily used to allow the Manageability controller to stabilize before and after power cycles and during flash reads and writes which take longer to execute than routine command issues.

6. Test Completion

On completion of the test run, the summary results will appear as shown below.

Please note the results are captured in results.log file in the same directory where the executable is located. The log will contain details of the test execution summary. There are four possible outcomes to each test case:

- **PASS**  all the expectations for those test cases were met.
- **FAIL**  at least one of the test failed
- **ABORTED**  test could not be completed due to connectivity issues.
- **SKIPPED**  skipped because the feature is not supported.

![Figure 2 Sample view](image)

\(^1\) Depending on verbosity level
# 7. Troubleshooting Guide

<table>
<thead>
<tr>
<th>Issue</th>
<th>Possible Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unable to connect to UUT via RMCP+</td>
<td>Possible incorrect IP Address in usercfg.cfg file.</td>
</tr>
<tr>
<td></td>
<td>Unable to ping the UUT using <code>&lt;ping IP Address&gt;</code></td>
</tr>
<tr>
<td></td>
<td>Username or Password not in sync for the UUT and the usercfg.cfg file.</td>
</tr>
<tr>
<td>Unable to start execution of the KCS/HECI test on the UUT</td>
<td>Management and monitoring and driver not enabled in the OS.</td>
</tr>
<tr>
<td>Test aborts and indicates no DCMI</td>
<td>Controller doesn’t support DCMI interface.</td>
</tr>
</tbody>
</table>
Appendix A

This appendix provides in detail the descriptions and variables the user should have knowledge of in preparing to execute the test suite against a DCMI supported server.

#############################################################
# User Configuration File - userconf.cfg
#############################################################
# The User Configuration file defines the Settings for the
# main application, and the RMCPP connection parameters,
# the timeout options of the Platform.
# This file is intended to be changed only if you have a good
# knowledge of the Manageability Controller and Platform
#
# Caution: Please follow the guidelines for initializing
# the following user configurations, any deviations
# will result in unpredictable behavior. All options need to be initialized.
#############################################################

# The [DCMI_Conformance] section defines the following options
# to control the level of information displayed in the Test
# suite to the screen and the file, the name of the result file
# options :
# -> screen-output
# -> log-to-file
# -> log-file-name
#Both option - the user can choose:
# no - log file will not be generated
# summary- for high level output to file
# details - for more detailed output
# info - for info level output more detailed than details
# warning - for warning messages
# debug - prints the raw data command sent to the DCMI and any other information
#
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
screen-output=summary

#---------------------------------------------------------------
log-to-file=summary

#---------------------------------------------------------------

# Option : log-file-name
# Description : The name of the log file
# Valid Options : valid File name
# Usage : log-to-file=results.log
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
log-file-name=results.log

#---------------------------------------------------------------

# Option : version
# Description : Forces suit to run in specified DCMI specification mode.
# If applied application will not be asking for the specification version at the execute stage.
# Valid Options : valid specification version:
# 1.1 - compatibility mode DCMI 1.1
# 1.5 - compatibility mode DCMI 1.5
# Usage : version=1.1
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
version=1.1

#---------------------------------------------------------------

# [INBAND] section defines the following options
# to provide the settings for INBAND transport
#
# DriverName -> The Driver Name or Interface Name to communicate with BMC.
# Currently support:
# - dcmi (for HECI based platform)
# - Microsoft_IPMI (KCS based platform)
#---------------------------------------------------------------
[INBAND]
DriverName=dcmi

#---------------------------------------------------------------

# [RMCPP] section defines the following options
# to provide the settings for RMCPP transport
#
# options :
# Target IP -> The target IP to establish RMCPP connection
# Username -> Username of manageability account provisioned in UUT
# Password -> Password corresponding to username
#==============================================================================================

[RMCPP]
#==============================================================================================
# Option : Target IP
# Description : Target IP of UUT (assigned to BMC)
# Valid Options : Target IP should have following format
#<xx.xx.xx.xx>. xx should be in decimal.
# Usage : (ex) targetIP=222.94.222.32
# Space terminates line, make sure there is no space before and after =
#==============================================================================================
targetIP=192.168.0.100

#==============================================================================================
# Option : Username
# Description : Valid Username provisioned in the BMC. Must be ADMIN
to run all tests.
# Valid Options : Username can be maximum of 16 characters
# Usage : (ex) username=username
# Space terminates line, make sure there is no space before and after =
#==============================================================================================
username=username

#==============================================================================================
# Option : CipherSuite
# Description : The CipherSuite ID as in the Table-4: Mandatory Cipher Suite support
# Valid Options : The valid IDs supported are - 3,8,17
# Usage : (ex) CipherSuite=8
# Space terminates line, make sure there is no space before and after =
#==============================================================================================
CipherSuite=3

#==============================================================================================
# [TimeOutValues] section defines the following options
# to provide platform specific Delay time in seconds required for
# the UUT to stabilise after power off/ power on etc, before
# sending the next command to BMC. The test suite expects these
time outs to be less than 50 seconds. The tests may fail if the
# time-out delays are not adequate enough for the BMC to stabilize.
# options :
# TimeOutPwrOn=25
# TimeOutPwrOff=15
# TimeOutLedBlink=15
# TimeOutSELReserve=1
# TimeOutSELGet=1
# TimeOutSELClear=1
#=================================================================================
[TimeOutValues]

#---------------------------------------------------------------
# Option : TimeOutPwrOn
# Description : The TimeOutPwrOn is the time in seconds required
#               for the platform to stabilise after a DC ON
#               is issued.
# Valid options : time delay of 1-50. minimal delay of 10 is
# Usage : (ex)TimeOutPwrOn=30
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
TimeOutPwrOn=40
#---------------------------------------------------------------
# Option : TimeOutPwrOff
# Description : The TimeOutPwrOff is the time in seconds required
#               for the platform to stabilise after a DC OFF
#               is issued.
# Valid options : time delay of 1-50. minimal delay of 15 is
# Usage : (ex)TimeOutPwrOff=30
# Space terminates line, make sure there is no space before and# after =
#---------------------------------------------------------------
TimeOutPwrOff=40
#---------------------------------------------------------------
# Option : TimeOutLedBlink
# Description : The TimeOutLedBlink is the time in seconds for
#               blinking the LED in the Chassis Identify command
#               testcase. This is the delay time for user to observe the
#               LED blinking in the platform
# Valid options : time delay of 1-50.
# Usage : (ex)TimeOutLedBlink=15
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
TimeOutLedBlink=15
#---------------------------------------------------------------
# Option : TimeOutSELReserve
# Description : The TimeOutSELReserve is the time in seconds
#               for the BMC in the platform to complete a
# SEL Reserve action
# Valid options : time delay of 1-50.
# Usage : (ex)TimeOutSELReserve=1
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
TimeOutSELReserve=1

#---------------------------------------------------------------
# Option : TimeOutSELGet
# Description : The TimeOutSELGet is the time in seconds
# for the BMC in the platform to complete a SEL Get action
# Valid options : time delay of 1-50.
# Usage : (ex)TimeOutSELGet=1
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
TimeOutSELGet=1

#---------------------------------------------------------------
# Option : TimeOutSELClear
# Description : The TimeOutSELClear is the time in seconds
# for the BMC in the platform to complete a SEL Clear action
# Valid options : time delay of 1-50.
# Usage : (ex)TimeOutSELClear=1
# Space terminates line, make sure there is no space before and after =
#---------------------------------------------------------------
TimeOutSELClear=1
Appendix B — Specification Cross Reference

This appendix provides a cross reference map of the line items in the DCMI specification to the test case number contained in the conformance test suite and brief description of the test case.

<table>
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<th>DCMI Specification</th>
<th>Test Case Number</th>
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<td>Get DCMI Capabilities Supported DCMI Capabilities</td>
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<td>1.2</td>
<td>Manageability Access Attributes</td>
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<td>1.3</td>
<td>Session Less DCMI Capabilities</td>
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<td>1.4</td>
<td>Minimum Platform Attributes</td>
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<td>Optional Platform Attributes</td>
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<td>Clear SEL</td>
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<td>Verify Clear SEL Action</td>
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² IPMI v2.0
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| 6.1, 6.5, 6.5.1, 6.5.2, 6.5.3, 6.5.4 | 5.x | Temperature Sensor Discovery:  
| | | • Inlet,  
| | | • CPU,  
| | | • Baseboard |

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<td>Get DHCP Timing 1</td>
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15 Watchdog Timer Tests

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Appendix C – Excerpts from results.log

This appendix shows a sample excerpt from the results.log that will be output by the DCMI conformance test suite for verbose level set to details.

DCMI Conformance Test Suite application started.

DCMI Conformance Test Suite!
 ** Tool Revision 1.5.0.26 **

Enter a number and <Enter> to chose a specification:

```
1.1  = ............................................1
1.5  = ............................................2
EXIT Test .........................................0
```

-> Enter a number and <Enter> to start the test required:

```
RMCP+ - OOB Test.................................1
KCS/HECI - InBand Test (Run on UUT only)......2
Validate RMCP+ CipherSuites Supported on Platform OOB..3
EXIT Test .........................................0
```

-> Checking Supported DCMI Capabilities for Platform.

```
Command Request: 0x2c 0 0x1 0xdc 0x1
Command Response: 0 0xdc 0x1 0x5 0x2 0 0x1 0x1
DCMI Specification conformance Major version is: 0x1
DCMI Specification conformance Minor version is: 0x5
DCMI Specification Parameter Revision is : 0x2
```

Optional Platform Capabilities in Power Management feature is supported.

```
Inband Channel bit - 1
OOB TMode bit - 0
OOB Sec LAN Channel Available - 0
Platform Manageability access Capabilities is Compliant with DCMI Specification.
```

Checking Manageability Access Attributes.

```
Command Request: 0x2c 0 0x1 0xdc 0x4
Command Response: 0 0xdc 0x1 0x5 0x2 0x1 0xff 0xff
Primary LAN channel number is : 0x1
```

Tests 1, Basic Discovery

```
Test Case 1.1 : Supported DCMI Platform Capabilities
PASS
Test Case 1.2 : Manageability Access Attributes
PASS
Test Case 1.3 : Session Less Capabilities
Session Less Test.
SKIPPED
Test Case 1.4 : Minimum Platform Attributes
```

```
Command Request: 0x2c 0 0x1 0xdc 0x2
Command Response: 0 0xdc 0x1 0x5 0x2 0xfe 0xa1 0 0x1
SEL Capabilities:
Number of SEL entries is : 510
PASS
```

Test Case 1.5 : Optional Platform Attributes
Command Request: 0x2c 0 0x1 0xdc 0x3  
Command Response: 0 0xdc 0x1 0x5 0x2 0x20 0x2  
PASS

Test Case 1.6  : Enhanced System Power Statistics Attributes  
Command Request: 0x2c 0 0x1 0xdc 0x5  
Command Response: 0 0xdc 0x1 0x5 0x2 0x9 0x5 0xf 0x1e 0x41 0x43 0x47 0x4f 0x5e 0x81  
Number Of Rolling Average Time Periods is 0x9  
PASS

Tests 2, Basics Test

Test Case 2.1  : Device ID from Management Controller  
Issue Get Device ID command.  
Command Request: 0x6 0 0x1  
Command Response: 0 0x50 0x81 0x2 0x16 0x2 0x8f 0x57 0x1 0 0x2 0xb 0x30 0x2 0x90 0x1  
Management Controller Firmware Major Revision  : 0x2  
Management Controller Firmware Minor Revision  : 0x16  
PASS

Test Case 2.2  : System GUID from Management Controller  
Command Request: 0x6 0 0x37  
Command Response: 0 0x3 0 0x4 0 0x5 0 0 0x6 0x9 0 0x8 0 0x7 0  
Get Device GUID returned: 3 0 2 0 4 0 5 0 0 6 9 0 8 0 7 0  
PASS

Test Case 2.3  : Asset Tag from UUT  
Command Request: 0x2c 0 0x6 0xdc 0 0  
Command Response: 0 0xdc 0  
Asset Tag not programmed in platform. Program AssetTag and retry  
PASS

Tests 3, Cipher Tests

Test Case 3.1  : Checking Supported CipherSuites  
Command Request: 0x6 0 0x54 0x1 0 0x80  
Command Response: 0 0x1 0xc0 0x3 0x1 0x41 0x81 0xc0 0x8 0x2 0x42 0x81 0xc0 0x11 0x3 0x44 0x81  
The Platform supports all the 3 Ciphersuites as per DCMI spec  
PASS

Tests 4, SEL Tests

Test Case 4.1  : Get SEL Info  
Command Request: 0xa 0 0x40  
Command Response: 0 0x51 0x1 0 0xd0 0x1f 0x6f 0x1d 0xe6 0x41 0x6f 0x1d 0xe6 0x41 0x3 0x8 0x2 0x42 0x81 0xc0 0x11 0x3 0x44 0x81  
The Platform supports all the 3 Ciphersuites as per DCMI spec  
PASS

Test Case 4.2  : Reserve SEL  
Command Request: 0xa 0 0x42  
Command Response: 0 0x3 0  
Delay for: 1s  
PASS

Test Case 4.3  : Get SEL Entry, with Reservation ID  
Command Request: 0xa 0 0x43 0x3 0 0 0 0 0x10  
Command Response: 0 xff 0xff 0x1 0 0x2 0x6f 0x1d 0xe6 0x41 0x20 0 0x4 0xc0 0x5f 0x6f 0x1 0xff 0xff  
SEL Values are:  
Record ID: 0x1  
Next Record ID: 0xFFFF  
Record Type: 0x2  
Timestamp: 0x41E61D6F  
Generator ID: 0x20  
Event Msg Rev: 0x4  
Sensor Type: 0xC0  
Sensor Number: 0x5F  
Event Type: 0x6F  
Event Data 1: 0x1  
Event Data 2: 0xFF
Test Case 4.4 : Get First SEL Entry after Reservation

Command Request: 0xa 0 0x43 0 0 0 0 0x10
Command Response: 0x0ff 0xff 0x1 0 0x2 0x6f 0x1d 0xe6 0x41 0x20 0 0x4 0xc0 0x5f 0x6f 0x1 0x0ff 0x0ff
SEL Values are:
  Record ID: 0x1
  Next Record ID: 0xFFFF
  Record Type: 0x2
  Timestamp: 0x41E61D6F
  Generator ID: 0x20
  Event Msg Rev: 0x4
  Sensor Type: 0xC0
  Sensor Number: 0x5f
  Event Type: 0x6f
  Event Data 1: 0x1
  Event Data 2: 0xff
  Event Data 3: 0xff

Delay for: 1s .
PASS

Test Case 4.5 : Get Last SEL Entry and Verify

Command Request: 0xa 0 0x43 0 0xbff 0xff 0 0x10
Command Response: 0x0ff 0xff 0x1 0 0x2 0x6f 0x1d 0xe6 0x41 0x20 0 0x4 0xc0 0x5f 0x6f 0x1 0x0ff 0x0ff
SEL Values are:
  Record ID: 0x1
  Next Record ID: 0xFFFF
  Record Type: 0x2
  Timestamp: 0x41E61D6F
  Generator ID: 0x20
  Event Msg Rev: 0x4
  Sensor Type: 0xC0
  Sensor Number: 0x5f
  Event Type: 0x6f
  Event Data 1: 0x1
  Event Data 2: 0xff
  Event Data 3: 0xff

Delay for: 1s .
PASS

Test Case 4.6 : Clear SEL

Command Request: 0xa 0 0x42
Command Response: 0 0x2 0
Delay for: 1s .

Command Request: 0xa 0 0x47 0x4 0 0x43 0x4c 0x52 0xaa
Command Response: 0 0x1
Delay for: 10s ..........
PASS

Test Case 4.7 : Verify SEL Clear Action

Command Request: 0xa 0 0x42
Command Response: 0 0x4 0
Delay for: 1s .

Command Request: 0xa 0 0x47 0x4 0 0x43 0x4c 0x52 0x0
Command Response: 0 0x1
Delay for: 10s ..........

SEL is indicated as cleared.
PASS

Tests 5, DCMI Sensor Tests
Test Case 5.1 : Sensors Entity: Inlet (0x40)

Command Request: 0x2c 0 0x7 0xdc 0x1 0x40 0 0
Command Response: 0 0xdc 0x1 0x1 0x7 0x1
PASS

Test Case 5.2 : Sensors Entity: CPU (0x41)
Command Request: 02c 0 07 0xdc 0x1 0x1
Command Response: 0 0xdc 0x2 0x9 0x1 0xa 0x1
PASS
Test Case 5.3 : Sensors Entity: Baseboard (0x42)

Command Request: 02c 0 07 0xdc 0x1 0x42 0 0
Command Response: 0 0xdc 0x1 0x1 0x1

PASS
Test Case 5.4 : Sensor Entity ID: 0x40, Type: 0x1, Instance: 1

Command Request: 02c 0 07 0xdc 0x1 0x40 0x1 0x1
Command Response: 0 0x8 0x1 0x7 0x1 0x51 0x1 0x3b 0x20 0 0x7 0x40 0x1 0x37 0xc8 0x1 0x1 0x2

Command Request: 0xa 0 022
Command Response: 0 0x54 0x6c

Command Request: 0xa 0 0x23 0x2e 0x6c 0x7 0x1 0x10
Command Response: 0 0x8 0x1 0x7 0x1 0x51 0x1 0x3b 0x20 0 0x7 0x40 0x1 0x37 0xc8 0x1 0x1 0x2

Command Request: 0xa 0 0x23 0x2e 0x6c 0x7 0x1 0x10
Command Response: 0 0x8 0x1 0x37 0x14 0x7f 0x80 0 0x28 0 0 0 0 0x2 0x2 0 0 0x10

Command Request: 0x4 0 0x2d 0x7
Command Response: 0 0x10 0 0 0 0x28 0

PASS
Test Case 5.5 : Sensor Entity ID: 0x41, Type: 0x1, Instance: 1

Command Request: 02c 0 07 0xdc 0x1 0x41 0x1 0x1
Command Response: 0 0xdc 0x1 0x2 0x9 0x1

Command Request: 0xa 0 0x22
Command Response: 0 0x54 0x6c

Command Request: 0xa 0 0x23 0x54 0x6c 0x9 0x1 0x10
Command Response: 0 0xa 0x1 0x9 0x1 0x51 0x1 0x3b 0x20 0 0x9 0x41 0x1 0x37 0xc8 0x1 0x1 0x2

Command Request: 0xa 0 0x23 0x54 0x6c 0x9 0x1 0x10
Command Response: 0 0xa 0x1 0 0xba 0 0xba 0 0 0 0 0 0 0 0 0x5 0 0 0xd0

Command Request: 0x4 0 0x2d 0x9
Command Response: 0 0x10 0 0 0 0 0

PASS
Test Case 5.6 : Sensor Entity ID: 0x41, Type: 0x1, Instance: 2

Command Request: 02c 0 07 0xdc 0x1 0x41 0x2 0x1
Command Response: 0 0xdc 0x2 0x1 0xa 0x1

Command Request: 0xa 0 0x22
Command Response: 0 0x70 0x6c

Command Request: 0xa 0 0x23 0x70 0x6c 0xa 0x1 0x10
Command Response: 0 0x11 0x1 0xa 0x1 0x51 0x1 0x3b 0x20 0 0xa 0x41 0x2 0x37 0xc8 0x1 0x1 0x2

Command Request: 0xa 0 0x23 0x70 0x6c 0xa 0x1 0x10 0x10
Command Response: 0 0x11 0x1 0 0x10 0x10 0x80 0x1 0 0x1 0 0 0 0 0x7 0xf1
Test Case 5.7  : Sensor Entity ID: 0x42, Type: 0x1, Instance: 1

Command Request: 0xc2 0x7 0xd 0x1 0x42 0x1 0x1
Command Response: 0x1 0x1 0x1 0x1

Command Request: 0xa 0x23 0x94 0x6c 0x1 0x1 0x10
Command Response: 0x7 0x1 0x1 0x37 0xc8 0x1 0x1 0x2

Command Request: 0x4 0x2d 0x1
Command Response: 0x18 0xc0 0

Command Request: 0x4 0x27 0x1
Command Response: 0x10 0x0 0x4b 0

PASS

Tests 6, DCMI SDR Tests
Test Case 6.1  : Checking SDR Repository Info

Command Request: 0xa 0x20
Command Response: 0x51 0x21 0 0xc0 0x17 0 0 0 0 0 0 0 0 0 0 0 0 0x2
SDR Version : 0x51
Record Count : 33
Free Space : 6080
Recent Addition TimeStamp : 0x0000
Recent Erase TimeStamp : 0x0000
Operation Support : 0x2

PASS

Tests 7, Chassis Commands
Test Case 7.1  : Issue Get Chassis Capabilities Command

Command Request: 0 0 0
Command Response: 0 0x1 0x20 0x20 0x20 0x20 0x20 0x20
Capabilities Flags : 0x1
Chassis FRU Info Device Address : 0x20
Chassis SDR Device Address : 0x20
Chassis SEL Device Address : 0x20
Chassis System Management Device Address : 0x20
Chassis Bridge Device Address : 0x20

PASS

Test Case 7.2  : Checking Chassis Status for Initial Power State

Command Request: 0 0 0x1
Command Response: 0 0x21 0x1 0x48 0
System Power is indicated as ON

PASS

Test Case 7.3  : Checking Chassis Identify Command supported
Turning UUT Identify LED ON

Command Request: 0 0 0x4 0 0x1
Command Response: 0
Please verify the Chassis Identify LED is blinking on UUT.

PASS
Delay for: 15s ...............
Turning UUT Identify LED OFF

Command Request: 0 0 0x4 0 0
Command Response: 0

PASS

Test Case 7.4 : Check ACPI Power State

Command Request: 0 0 0x1
Command Response: 0 0x1 0 0x48 0

Command Request: 0x6 0 0x7
Command Response: 0 0x20 0

ACPI Power State is indicated correctly 0x20
Test is executing on Local Connection Can NOT make POWER Cycle!!
SKIPPED

Tests 8, Verify support for the LAN Configuration Commands

Test Case 8.1 : VLAN Support Test

Command Request: 0xc 0 0x2 0x1 0x14 0 0
Command Response: 0 0x11 0 0
VLAN is disabled in Platform

PASS

Test Case 8.2 : VLAN Priority Test

Command Request: 0xc 0 0x2 0x1 0x15 0 0
Command Response: 0 0x11 0
Current VLAN Priority is 0

PASS

Test Case 8.3 : VLAN RMCPP+ Entry Support

Command Request: 0xc 0 0x2 0x1 0x16 0 0
Command Response: 0 0x11 0x3
Current number of RMCPP Cipher Suites Entry Support is 3

PASS

Test Case 8.4 : VLAN RMCPP+ Entries

Command Request: 0xc 0 0x2 0x1 0x17 0 0
Command Response: 0 0x11 0x3 0x8 0x11
Supported RMCPP Cipher Suites Entries are:
   Cipher - 0x3
   Cipher - 0x8
   Cipher - 0x11

PASS

Test Case 8.5 : VLAN RMCPP+ Privilege level

Command Request: 0xc 0 0x2 0x1 0x18 0 0
Command Response: 0 0x11 0 0x44 0x4 0x4 0 0 0 0 0 0 0 0 0 0 0 0

PASS

Tests 9, DCMI SOL Tests

Test Case 9.1 : Checking Serial Over Lan Configuration

Command Request: 0xc 0 0x22 0x1 0 0 0
Command Response: 0 0x11 0

Command Request: 0xc 0 0x22 0x1 0x1 0 0
Command Response: 0 0x11 0x1

Command Request: 0xc 0 0x22 0x1 0x2 0 0
Command Response: 0 0x11 0xc4

Command Request: 0xc 0 0x22 0x1 0x3 0 0
Command Response: 0 0x11 0x6 0x20

Command Request: 0xc 0 0x22 0x1 0x4 0 0
Command Response: 0 0x11 0x5 0x64

Command Request: 0xc 0 0x22 0x1 0x5 0 0
Command Response: 0 0x11 0xa
Test Case 9.2 : Checking SOL Channel Auth. Capabilities
Test does not run in InBand
SKIPPED

Test Case 9.3 : Checking SOL Payload Activation - Type SOL
Test does not run in InBand.
SKIPPED

Test Case 9.4 : Checking SOL Payload Instance Info - Type SOL
Test does not run in InBand.
SKIPPED

Tests 10, DCMI TMode Tests
Test Case 10.1 : TMODE Support Test
TMODE is NOT Supported and it is Optional.
SKIPPED

Tests 11, DCMI Discovery for Power Management Controller Info
Test Case 11.1 : DCMI Get Power Reading
Command Request: 0x2c 0 0x2 0xdc 0x1 0 0
Command Response: 0xdc 0x2c 0 0x28 0 0x57 0 0x29 0 0xbd 0x1f 0xe6 0x41 0x48 0xfe
0x48 0x39 0x40
System Current Power in Watts : 44
Minimum over sampling duration in Watts : 40
Maximum over sampling duration in Watts : 87
Average over sampling duration in Watts : 41
Power Measurement is active.
PASS

Test Case 11.2 : DCMI Get Power Limit
Command Request: 0x2c 0 0x3 0xdc 0 0
Command Response: 0x80 0xdc
System Power Limit is not Active
PASS

Tests 12, LAN Configuration Check Tests
Test Case 12.1 : Lan Configuration Gratuitous Arp Check
Command Request: 0xc 0 0x2 0x1 0xa 0 0
Command Response: 0 0x11 0x2
Gratuitous ARP is disabled, Platform compliant with DCMI spec
PASS

Test Case 12.2 : Lan Configuration Arp Control Check
Command Request: 0xc 0 0x2 0x1 0xa 0 0
Command Response: 0 0x11 0x2
BMC generated ARP response is enabled in Platform
PASS

Test Case 12.3 : Lan Configuration IP Source Check
Command Request: 0xc 0 0x2 0x1 0x4 0 0
Command Response: 0 0x11 0x1
IP source is set to Static, compliant with DCMI spec
PASS

Test Case 12.4 : Lan Configuration Access Mode Check
Command Request: 0x6 0 0x41 0x1 0x80
Command Response: 0 0x22 0x4
Primary Channel Access mode is set to Always available
PASS

Test Case 12.5 : User Access Check
Test does not run in InBand, skipped
SKIPPED

Test Case 12.6 : Multi Session Test
Test does not run in InBand
SKIPPED
Test Case 12.7 : Get MC ID String Test

Command Request: 0x2c 0x9 0xdc 0x10 0x44

MC ID String Data Length = 0x10

Command Request: 0x2c 0x9 0xdc 0x10

Command Response: 0 0xdc 0x10 0x44 0x4d 0x49 0x30 0x30 0x30 0x41 0x45 0x34 0x31 0x37 0x45 0x33 0x30 0x42

MC ID String is: 'DCMI000AE417E30B' and has only ASCII characters.

PASS

Tests 13, Configuration Parameters Test

Test Case 13.1 : Get Active DHCP

Command Request: 0x2c 0x13 0xdc 0x1 0

Command Response: 0 0xdc 0x1 0x5 0x1 0

PASS

Test Case 13.2 : Get Discovery Configuration

Command Request: 0x2c 0x13 0xdc 0x2 0

Command Response: 0 0xdc 0x1 0x5 0x1 0x3

PASS

Test Case 13.3 : Get DHCP Timing 1

Command Request: 0x2c 0x13 0xdc 0x3 0

Command Response: 0 0xdc 0x1 0x5 0x1 0x4

PASS

Test Case 13.4 : Get DHCP Timing 2

Command Request: 0x2c 0x13 0xdc 0x4 0

Command Response: 0 0xdc 0x1 0x5 0x1 0x78 0

PASS

Test Case 13.5 : Get DHCP Timing 3

Command Request: 0x2c 0x13 0xdc 0x5 0

Command Response: 0 0xdc 0x1 0x5 0x1 0x40 0

PASS

Tests 14, Thermal Management Tests

Test Case 14.1 : Temperature reading for sensor: Inlet (0x40)

Command Request: 0x2c 0x10 0xdc 0x1 0x40 0 0

Command Response: 0 0xdc 0x2 0x1 0x21 0x1

Available instances for 0x40: 1
Sensor number: 1 value: +33C

PASS

Test Case 14.2 : Temperature reading for sensor: CPU (0x41)

Command Request: 0x2c 0x10 0xdc 0x1 0x41 0 0

Command Response: 0 0xdc 0x2 0x1f 0x1 0x1e 0x2

Available instances for 0x41: 2
Sensor number: 1 value: +31C
Sensor number: 2 value: +30C

PASS

Test Case 14.3 : Temperature reading for sensor: Baseboard (0x42)

Command Request: 0x2c 0x10 0xdc 0x1 0x42 0 0

Command Response: 0 0xdc 0x1 0x18 0x1

Available instances for 0x42: 1
Sensor number: 1 value: +24C

PASS

Tests 15, Watchdog Timer Tests

Test Case 15.1 : Get Watchdog Timer

Get Watchdog Timer command

Command Request: 0x2c 0x25

Command Response: 0 0 0 0 0 0 0 0 0

PASS
### DCMI 1.5 Conformance Suite

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<th>Supported DCMI Platform Capabilities</th>
<th>PASS</th>
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<td>PASS</td>
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<tr>
<td>Test Case 1.3</td>
<td>Session Less Capabilities</td>
<td>SKIPPED</td>
</tr>
<tr>
<td>Test Case 1.4</td>
<td>Minimum Platform Attributes</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 1.5</td>
<td>Optional Platform Attributes</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 1.6</td>
<td>Enhanced System Power Statistics Attributes</td>
<td>PASS</td>
</tr>
</tbody>
</table>

### Tests 2, Basics Test

<table>
<thead>
<tr>
<th>Test Case 2.1</th>
<th>Device ID from Management Controller</th>
<th>PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Case 2.2</td>
<td>System GUID from Management Controller</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 2.3</td>
<td>Asset Tag from UUT</td>
<td>PASS</td>
</tr>
</tbody>
</table>

### Tests 3, Cipher Tests

| Test Case 3.1 | Checking Supported CipherSuites       | PASS |

### Tests 4, SEL Tests

<table>
<thead>
<tr>
<th>Test Case 4.1</th>
<th>Get SEL Info</th>
<th>PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Case 4.2</td>
<td>Reserve SEL</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 4.3</td>
<td>Get SEL Entry, with Reservation ID</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 4.4</td>
<td>Get First SEL Entry after Reservation</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 4.5</td>
<td>Get Last SEL Entry and Verify</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 4.6</td>
<td>Clear SEL</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 4.7</td>
<td>Verify SEL Clear Action</td>
<td>PASS</td>
</tr>
</tbody>
</table>

### Tests 5, DCMI Sensor Tests

<table>
<thead>
<tr>
<th>Test Case 5.1</th>
<th>Sensors Entity: Inlet (0x40)</th>
<th>PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Case 5.2</td>
<td>Sensors Entity: CPU (0x41)</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 5.3</td>
<td>Sensors Entity: Baseboard (0x42)</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 5.4</td>
<td>Sensor Entity ID: 0x40, Type: 0x1, Instance: 1</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 5.5</td>
<td>Sensor Entity ID: 0x41, Type: 0x1, Instance: 1</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 5.6</td>
<td>Sensor Entity ID: 0x41, Type: 0x1, Instance: 2</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 5.7</td>
<td>Sensor Entity ID: 0x42, Type: 0x1, Instance: 1</td>
<td>PASS</td>
</tr>
</tbody>
</table>

### Tests 6, DCMI SDR Tests

| Test Case 6.1 | Checking SDR Repository Info          | PASS |

### Tests 7, Chassis Commands

<table>
<thead>
<tr>
<th>Test Case 7.1</th>
<th>Issue Get Chassis Capabilities Command</th>
<th>PASS</th>
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<tbody>
<tr>
<td>Test Case 7.2</td>
<td>Checking Chassis Status for Initial Power State</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 7.3</td>
<td>Checking Chassis Identify Command supported</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 7.4</td>
<td>Check ACPI Power State SKIPPED</td>
<td></td>
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</table>

### Tests 8, Verify support for the LAN Configuration Commands

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<tr>
<th>Test Case 8.1</th>
<th>VLAN Support Test</th>
<th>PASS</th>
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<tbody>
<tr>
<td>Test Case 8.2</td>
<td>VLAN Priority Test</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 8.3</td>
<td>VLAN RMCPFP+ Entry Support</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 8.4</td>
<td>VLAN RMCPFP+ Entries</td>
<td>PASS</td>
</tr>
<tr>
<td>Test Case 8.5</td>
<td>VLAN RMCPFP+ Privilege level</td>
<td>PASS</td>
</tr>
</tbody>
</table>

### Tests 9, DCMI SOL Tests

<table>
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<tr>
<th>Test Case 9.1</th>
<th>Checking Serial Over Lan Configuration</th>
<th>PASS</th>
</tr>
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<tbody>
<tr>
<td>Test Case 9.2</td>
<td>Checking SOL Channel Auth. Capabilities</td>
<td>SKIPPED</td>
</tr>
<tr>
<td>Test Case 9.3</td>
<td>Checking SOL Payload Activation - Type SOL</td>
<td>SKIPPED</td>
</tr>
<tr>
<td>Test Case 9.4</td>
<td>Checking SOL Payload Instance Info - Type SOL</td>
<td>SKIPPED</td>
</tr>
</tbody>
</table>

### Tests 10, DCMI TMode Tests

| Test Case 10.1 | TMODE Support Test | SKIPPED |

### Tests 11, DCMI Discovery for Power Management Controller Info

<table>
<thead>
<tr>
<th>Test Case 11.1</th>
<th>DCMI Get Power Reading</th>
<th>PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Case 11.2</td>
<td>DCMI Get Power Limit</td>
<td>PASS</td>
</tr>
</tbody>
</table>

### Tests 12, LAN Configuration Check Tests

<table>
<thead>
<tr>
<th>Test Case 12.1</th>
<th>Lan Configuration Gratuitous Arp Check</th>
<th>PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Case 12.2</td>
<td>Lan Configuration Arp Control Check</td>
<td>PASS</td>
</tr>
</tbody>
</table>
Test Case 12.3 : Lan Configuration IP Source Check             PASS
Test Case 12.4 : Lan Configuration Access Mode Check          PASS
Test Case 12.5 : User Access Check                            SKIPPED
Test Case 12.6 : Multi Session Test                           SKIPPED
Test Case 12.7 : Get MC ID String Test                        PASS

Tests 13, Configuration Parameters Test
Test Case 13.1 : Get Active DHCP                               PASS
Test Case 13.2 : Get Discovery Configuration                  PASS
Test Case 13.3 : Get DHCP Timing 1                            PASS
Test Case 13.4 : Get DHCP Timing 2                            PASS
Test Case 13.5 : Get DHCP Timing 3                            PASS

Tests 14, Thermal Management Tests
Test Case 14.1 : Temperature reading for sensor: Inlet (0x40)  PASS
Test Case 14.2 : Temperature reading for sensor: CPU (0x41)    PASS
Test Case 14.3 : Temperature reading for sensor: Baseboard (0x42) PASS

Tests 15, Watchdog Timer Tests
Test Case 15.1 : Get Watchdog Timer                           PASS