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	REQUIRED APPROVAL	SIGNATURE	DATE
☒	**TEST ENGINEERING**	**Joe White**	**05/22/17**
☐	**MANUFACTURING ENGINEERING**		
☐	**NEW PRODUCT INTRODUCTION**		

REVISION HISTORY

REVISION	REVISION DESCRIPTION	ECO #	DATE	ORIGINATOR
A	Initial release Adapted from ver 1.4 release from Paul Tindle.			
2	Made Generic		05/22/17	Joe White

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1.0 Introduction

This Procedure defines the basic use and operating procedures of CMtest. This procedure assumes the operator has some familiarity with Unix operating systems. This document should be used for creating COMPANY Test procedures for Specific products.

This procedure contains specific references to a product. These are left in place as examples

1.1 Scope

This procedure applies to the following departments:

- COMPANY Test Engineering

- COMPANY subcontractors.

This document is divided in the following section:

- Hardware Requirements
- Software Requirements
- Test Procedure
- Appendix

1.2 Affected Products Table:

COMPANY 5 Slot Chassis boards and final tests. See ProComm Manuals for Chassis Testing and board programming.

1.3 References

- Guide to RedHat Linux
- COMPANY CMtest Installation Guide
- COMPANY CMtest Programmers Guide

2.0 Hardware Requirements

The following hardware items are needed to perform this procedure:

- PC with minimum 1 serial port with Fedora Core 3 installed
- Network requirements met
- Test station Hardware requirements met.

3.0 Software Requirements

- CMtest installed
- Terminal Software if this process is to be run from a Windows machine

4.0 Using CMTest

4.1 Start CMTest

1) Log into PC. User: mfg Password: password.
2) Open a Terminal to CMTest. This can be a local terminal or Telnet session to the unix PC
3) Type **`cmtest.`** A menu will be displayed. Example:

```
joe@mfg-svr1:[~/Test/TestScripts/cmtest18/cmtest/bin]> ./cmtest.pl -f -Z2
Current Software release: 3.0_Release
Current Diag release: layne010307/


Session 2: Starting cmtest version 1.8.1_Released at 04/18 09:38:41

Please enter your UserID#: test

Test Options:
        1) Exit
        2) Bench Program       [Initial PCB bringup Programming]
        3) Bench Test          [Initial PCB bringup]
        4) Chassis Pre BI      [Chassis Test IMC and GLC Pre-BI]
        5) Chassis BI          [12 Hour BI test]
        6) Chassis POST BI     [Chassis Test IMC and GLC POST-BI]
        7) Chassis Config      [Chassis Configuration]
        8) Chassis Extended    [Long term system tests]
        9) Chassis ORT         [MTBF Validation]
        10) Chassis Program     [Chassis Program]
        11) Chassis TEST Pre BI [Chassis TEST]
        12) Chassis TEST Post BI[Chassis TEST]
        13) Order Entry         [Enter Sales Order]
        14) Debug               [Temporary]

Select item #?:5
Exec'ing Chassis BI...
```

4) At the `lease enter your UserID#:`**`.`** Enter your user ID. This logs the users ID and may limit access to certain test functions. Currently only a “test” operator ID is defined
5) Select the test you wish to perform by entering the test menu number at the `Select item #?` Prompt.

4.2 Cmtest Menu description

The following are description of menu items shown in 4.1 Start CMtest

1) Text: `Current Diag release: diag042106` Shows the current Diagnostic software build to be used for testing. This may not be the same build that is in firmware.
2) Text: `../lib/Init_COMPANY.pm [21 mins]` Shows any recent changes to libraries, useful during development
3) Text: `../lib/Init_COMPANY.pm [21 mins]` Shows any recent changes to libraries, useful during development
4) Text: `Session 1: Starting cmtest version 1.7.0_Prelim at 05/12 09:42:05` Shows the Session number, this number will typically correlate to a Serial port used

in the system. Cmtest version, will display the current script version followed by a test start time

5) **Text** `2) Bench Program [Initial PCB bringup Programming]` Shows the menu items that can be entered at the `Select item #?` Prompt.

4.3 Executing a Test

1) After a test menu number is selected CMtest will begin executing the test script. First the defined serial or telnet connection will be started. Example:
   `spawning Serial connection: /usr/bin/minicom -C /home/mfg/tmp/s1/Comm.log 1 ..`
2) This will be followed by a message that CMtest is processing the command file. Example: `Processing Cmd file 'Program_GLC.dat' ...`
3) This will be followed by a message that CMtest is processing the command file. The files are checked for errors before proceeding.
4) If the Station does not have APC power control the operator will be prompted to turn on/off power as required by test scripts.
5) Tests are not interactive unless prompted by script, this differs from other scripting software such as ProComm.
6) Messages to the terminal are not what is being seen on the communication ports. To see what was happening log files would need to be examined.
7) Tests are executed for the most part by sending some text and then waiting for a prompt to comeback. After getting a prompt the text in between issuing the command and getting the prompt is analyzed for the proper content.
8) Tests can timeout due to not getting the correct prompt back or not getting the prompt in the allotted time.

4.4 Test Messages

The following is an excerpt of a failing BI test.

```
Processing Cmd file 'Chassis_BI.dat' ...
    #: Turning on UUT Power ...
    Power ON
    Processing Cmd file 'Stop_COMPANY_bootloader.inc' ...
    #: Stopping COMPANY bootup at bootloader..
    Processing Cmd file 'cfint_boot_diag.inc' ...
    #: CFINT Booting Diags...
    Processing Cmd file 'Check_HDP_Log_Error.inc' ...
    #: Check Console Logs
    #: Get System serial numbers
    PN[0] = 00315-01 Rev 01, SN = 0070105370100002
    PN[1] = 00292-03 Rev 01, SN = 0020128050000010
    PN[2] = 00002-00 Rev 03, SN = 0010133050000036
    PN[3] = 00002-03 Rev 01, SN = 0010133050000029
    PN[4] = 00648-02 Rev 01, SN = 0110140050000018
    PN[5] = 00648-03 Rev 01, SN = 0110133050000033
    PN[15] = 00301-03 Rev 01, SN = 0080105370100001
    PN[18] = 00299-02 Rev 01, SN = 0090105370100016
    PN[19] = 00299-02 Rev 01, SN = 0090105370100017
    PN[21] = 00297-02 Rev 01, SN = 0100105370100012
    PN[22] = 00297-02 Rev 01, SN = 0100105370100003
```

```
Configuration Slot1 1 Slot2 1 Slot3 1 Slot4 1 Slot5 1 Slots active
Processing Cmd file 'Set_Fan_Speed.inc' ...
#: All Fans on Low
Processing Cmd file 'Check_IPMI_Chassis.inc' ...
#: Check Chassis U200
Found U200  83 131
#: Check Chassis I2C IPMI A comunications..
#: Check Chassis IPMI
#: Check FAN1(RIGHT) IPMI
#: Check FAN2(LEFT) IPMI
#: Check PEM1(RIGHT) IPMI
#: Check PEM2(LEFT) IPMI
#: Check Alarm1(Right) IPMI
#: Check Slot 0 IPMI
#: Check Slot 1 IPMI
#: Check Slot 2 IPMI
#: Check Slot 3 IPMI
#: Check Slot 4 IPMI
Processing Cmd file 'Reset_all_slots.inc' ...
#: Reset All Slots
#: Reset GLC 1
#: Reset GLC 2
#: Reset GLC 3
#: Reset GLC 4
#: Wait for Slot 1 GLC
#: Wait for Slot 2
#: Wait for Slot 3
#: Wait for Slot 4
#: Reset IMC
Processing Cmd file 'Stop_COMPANY_bootloader.inc' ...
#: Stopping COMPANY bootup at bootloader..
Processing Cmd file 'cfint_boot_imc.inc' ...
#: Bootloader configure COMPANY.bin from cfint...
#: Booting to COMPANY Released OS from CFINT....
Log_Error: Timeout!: Processing Cmd file 'cfint_boot_imc.inc' - Line 34
[Waiting 120 for "COMPANY[local]#"]
Writing new Event & Cfg Log records ...
Finished! (8 mins 29 secs) - Result: FAIL!
```

1) This test begins by turning on power. This example the power was controlled by an APC, so the operator was not prompted to turn on power.
2) Child routines can be seen as they are processed in the lines starting with “Processing…”
3) Lines beginning with a # sign are messages from the command routines
4) Errors are noted by the lines starting with “Log_Error”. These can be of two types

5.0 Appendix

5.1 Glossary of Terms

- CMTest - Current* label for the Automated Test Executive
- UUT - Unit Under Test
- ATT - Actual Test Time [Secs] (excluding operator wait time)
- TEC - Total Error Count
- TID - Test ID
- TOLF - Time Of Last Failure*
- TSLF - Time Since Last Failure*
- TTF - Time To [1st] Failure [Secs]
- TTT - Total Test Time [Secs]
- Time [tick count] format.

5.2 Conventions

- `Plain courier` Names of variables shown in command syntax that you replace with your own network information. This convention also identifies actual display output that has been copied from the router.
- **`Bold courier`** Command names and keywords shown in the text and references. These commands must be entered exactly as shown. It also highlights significant lines in the sample output.
- {} Curly braces indicate a choice of required keywords or variables. You must enter at least one of the enclosed parameters. < > Angle brackets indicate variables for user input. Replace the angle brackets and variable name with information that is indicative of your setup. | Pipe operators indicate a choice. You can enter one of the parameters on either side of this operator.
- [ ] Square brackets indicate a choice of optional keywords or variables.