Release Note
Schroff firmware part number 63998-05161
Based on Pigeon Point Systems (PPS) firmware release 2.4.2 for ShMM-300

Introduction:

The firmware package "sentry.63998-05161.zip" contains Firmware release 2.4.2 for the ShMM-300. The PPS RFS image has been modified by Schroff to meet customer's requirements and to adapt the firmware to the Schroff ATCA chassis. The kernel image has not been modified and is identical to the PPS kernel image. The Schroff part number for this firmware release is 63998-05161.

Shelf manager versions
The overview below shows the different versions of Schroff Shelf Manager carrier board.

Note: This release note only applies to shelf manager carrier boards which have the Pigeon Point Systems **ShMM-300 Module** installed. Before proceeding with this firmware installation, please make sure that your shelf manager is equipped with a ShMM-300 module. The photo below shows the ShMM-500 and the ShMM-300 modules

Photo	Type	RC2-variable
	ACB-III	rc.acb3
	ACB-II	rc.acb2

	SMC-1	rc.smc1

Preparation:

Firmware files
Unzip the file sentry.63998-05161.zip. This file contains the following Pre-Built images:

TFTP Upgrade files:
63998-05161.kernel   Upgrade kernel image for TFTP upgrade
63998-05161.rfs   Upgrade RFS image for TFTP upgrade

FRU ID files
The Shelf Manager firmware images also contain FRU ID files for the Shelf, Fan Trays, PEMs, SAP and the Shelf Manager.

Important Note: This firmware release also contains updated chassis FRU data files. These FRU data files are stored in the /var/nvdata directory of the ShMM-300. The installation procedure of the FRU data files is described below. Please make sure to install these FRU data files after installing the new firmware image.

FRU ID files included in firmware version 63998-05161:

FRU ID file name	Description
BPL000763AABIN.bin	ACB-II Shelf Manger, Bused IPMB, P/N BPL000763
BPL003011AABIN.bin	SAP for 5-Slot ATCA Shelf, P/N BPL003011
SYS000764BCBIN.bin	5U 5-Slot ATCA Shelf, P/N SYS000764
SYS000766BIBIN.bin	5U 5-Slot ATCA Shelf, P/N SYS000766
SYS000766FTACBIN.bin	5U 5-Slot ATCA Shelf, P/N SYS000766FT
SYS001916ABBIN.bin	6U 5-Slot ATCA Shelf, P/N SYS001916
SYS002927ACBIN.bin	6U 5-Slot ATCA Shelf, P/N SYS002927
SYS03214RABBIN.bin	5U 5-Slot ATCA Shelf, P/N SYS003214

Upgrading the Shelf Manager to Release 2.4.2:

Important Notice: The starting offset of the RFS image in flash has been changed from **0x120000** to **0xA000**. This provides more room for the RFS image. Steps 5 and 7 below have been changed to reflect this new flash layout - The kernel now resides in sectors 1:9-16, and the RFS in 1:17-70. Step 9 now describes how to change the bootcmd variable to boot the images from 0x20000 and 0xA0000.

Step1. Download these to your TFTP server:

6399805161.kernel and 6399805161.rfs

Step2. Reboot and gain serial port access to armboot:

ARMboot code: 10f00000 -> 10f15a8c
DRAM Configuration:
Bank #0: 10000000 16 MB
Flash: 8 MB
Hit any key to stop autoboot: 0
ShMM #

Step3. Check network environment settings:

ShMM # printenv serverip ipaddr netmask gatewayip
serverip=192.168.0.7
ipaddr=192.168.0.2
netmask=255.255.0.0
gatewayip=192.168.0.1

Step3. If any of these need changing, do it as follows:

ShMM # setenv serverip 192.168.0.88
ShMM # saveenv

Step4. TFTP download the sentry.shmm300.kernel image:

ShMM # *tftp 10400000 63998-05161.kernel*
...
Bytes transferred = 488181 (772fa hex)

Step5. Erase the flash area that contains the kernel image:

ShMM # *erase 1:9-16*
Erase Flash Sectors 9-16 in Bank # 1:
...
Done.

Step6. Program the kernel image to flash:

ShMM # *cp.b 10400000 20000 772fa*
Copy to Flash... done.

Step7. Repeat the previous steps for the RFS image:

ShMM # *tftp 10400000 63998-05161.rfs*
...
Bytes transferred = 3514432 (35b040 hex)

ShMM # *erase 1:17-70*
Erase Flash Sectors 17-70 in Bank # 1:
...
Done.
ShMM # *cp.b 10400000 A0000 35ffff*
Copy to Flash... done.

Step8. Erase the JFFS filesystems:

ShMM # *erase 2:1-70*
...
Done.

Step9. Change the kernel boot address:

ShMM # *setenv bootcmd run setup_bootargs\; bootm 20000 A0000*
ShMM # *saveenv*

	ShMM # *printenv bootcmd* bootcmd=run setup_bootargs; bootm 20000 A0000

Step10. Set the correct RC2 start up script (Please see the table at the top of this document for the RC2-variable that corresponds to your shelf manager version)	**ShMM** # printenv rc2
	rc2=/etc/rc.acb2
	ShMM # setenv rc2 /etc/rc.acb3
	ShMM # saveenv
	Un-Protected 1 sectors
	Erasing sector 0 ... Erasing sector at 0x 800000 ok.
	Saving Environment to Flash...done.
	Protected 1 sectors
	ShMM # printenv rc2
	rc2=/etc/rc.acb3
	
	ShMM # *run bootcmd*

Step11. Boot the shelf manager	

Step 12
Downloading FRU data files

Change to the var/nvdata directory
#
cd /var/nvdata

To download the FRU files, the "clia frudataw" command is used.

<u>Example:</u>

Basic command: `clia frudataw 20 1 <Chassis FRU file name>`
The "chassis FRU file name" includes the Schroff parts number of the Chassis or the FRU.
You want to update a chassis with part number SYS000766
➔ The corresponding FRU file in the /var/nvdata directory is: `SYS000766BIBIN.bin`
Thus, the command to enter is:
`clia frudataw 20 1 SYS000766BIBIN.bin`

<u>Download of FRU data to shelf SEEPROM 1:</u>
`# clia frudataw 20 1 <Chassis FRU file name>`

<u>Download of FRU data to shelf SEEPROM 2:</u>
`# clia frudataw 20 2 <Chassis FRU file name>`

Step 13
Reboot the shelf manager

#
reboot

You can verify the version that you are running with the "version" command:

```
# version
Firmware Image Version 63998-05161

Pigeon Point Shelf Manager Command Line Interpreter

Pigeon Point Shelf Manager ver. 2.4.2
Pigeon Point is a trademark of Pigeon Point Systems.
Copyright (c) 2002-2006 Pigeon Point Systems
Build date/time: Jul 14 2006 10:14:59
All rights reserved
```

Firmware part number 63998-05161 configuration file

The configuration file /etc/shelfman.conf contains all PPS configuration variables for the shelf manager. Variables that have been modified for Firmware version 63998-05161 are stored in the additional configuration files /etc/shelfman.conf.ACB-II, /etc/shelfman.conf.ACB-III and /etc/shelfman.conf.ACB-IV The content of the custom specific configuration files is listed below.

```
# cat shelfman.conf.ACB-II
CARRIER = ACB
#CARRIER_OPTIONS = "NEBS"
#CARRIER_OPTIONS = "CM_INT_UP=5; CM_INT_DOWN=5;"
CARRIER_OPTIONS = "IN_EX_SWITCHOFF=0; FRU_IN_ADM1026=0;"
#CARRIER_OPTIONS = "NEBS; IN_EX_SWITCHOFF=0; CM_INT_UP=30; CM_INT_DOWN=10;"
#MAX_ATCA_FANLEVEL = 9
#MAX_ATCA_TEMP = 30
COOLING_FAN_INCREASE_TIMEOUT = 60
COOLING_FAN_DECREASE_TIMEOUT = 60
FAN_LEVEL_STEP_UP = 2
FAN_LEVEL_STEP_DOWN = 1
NORMAL_STABLE_TIME = 1800
INITIAL_FAN_LEVEL = 8
MIN_FAN_LEVEL = 3
SWITCHOVER_ON_HANDLE_OPEN = TRUE
SWITCHOVER_TIMEOUT_ON_BROKEN_LINK = -1

# cat shelfman.conf.ACB-III
CARRIER = ACB
#CARRIER_OPTIONS = "NEBS"
#CARRIER_OPTIONS = "CM_INT_UP=5; CM_INT_DOWN=5;"
CARRIER_OPTIONS = "IN_EX_SWITCHOFF=0; FRU_IN_ACB1026=0;"
#CARRIER_OPTIONS = "NEBS; IN_EX_SWITCHOFF=0; CM_INT_UP=30; CM_INT_DOWN=10;"
#MAX_ATCA_FANLEVEL = 9
#MAX_ATCA_TEMP = 30
COOLING_FAN_INCREASE_TIMEOUT = 60
COOLING_FAN_DECREASE_TIMEOUT = 60
FAN_LEVEL_STEP_UP = 2
FAN_LEVEL_STEP_DOWN = 1
NORMAL_STABLE_TIME = 1800
IPMB_LINK_ISOLATION_TIMEOUT = 60
INITIAL_FAN_LEVEL = 8
MIN_FAN_LEVEL = 3
REDUNDANCY_NET_ADAPTER = "usb0"
```

```
REDUNDANCY_NET_ADAPTER2 = "usb1"
RMCP_NET_ADAPTER2 = "eth1"
SWITCHOVER_ON_HANDLE_OPEN = TRUE
SWITCHOVER_TIMEOUT_ON_BROKEN_LINK = -1
```

New and changed Schroff shelf specific features for FW release 2.4.2:

1. Updated releases of Monterey Linux.
   This release in based on an update of Monterey Linux that has the following new and changed features:
   - ShMM-500: updated Monterey Linux release to mips-20070215. Removed remaining copyrighted files in RPMs and removed OpenSSL entirely.
   - ShMM-500: modified the approach for scheduling the handling of incoming Ethernet packets in the kernel. With the new approach, incoming Ethernet packets are only handled in context of a dedicated kernel thread, which provides better responsiveness in network packet flood and denial of service attack situations. Previously, the network packet handler was unconditionally invoked as part of handling any hardware interrupts.
   - This modified approach (the last of several incremental measures taken in this area over the last several releases) was tested in an Address Resolution Protocol (ARP) storm environment on the ShMM-500R Ethernet device Eth0, with ARP packets arriving at the rate of about 3,200 per second. The Shelf Manager remained responsive during this ARP storm and successfully performed its management duties as either the active or backup Shelf Manager. Stress testing was performed during the ARP attack with the Shelf Manager successfully performing hundreds of loops of switchovers and reliable upgrade.

2. Automatic event generation on air filter expiration eliminated.
   In previous releases, where air filter management was explicitly supported for some ShMM carriers, an event was automatically generated when the replacement date for an air filter was exceeded. This event is no longer generated.

3. Added support for new PPS-specific records in the Shelf FRU Information.
   New PPS-specific MultiRecords have been introduced in this release and support for them has been added. These MultiRecords are used to store the date and time of air filter expiration and the date and time of creation of or change to the current Shelf FRU Information image.

4. Added option -x to the command clia shelfaddress.
   This option allows a user to specify a new binary shelf address as a sequence of bytes in hexadecimal.

5. Increased the maximum number of CLI command arguments from 24 to 32.
   This increases the maximum number of parameter bytes in the command clia sendcmd to 28, which allows a user of this command to send long IPMI commands.

Bug Fixes for Release 2.4.2

Several bugs have been fixed in this release of the Shelf Manager; they include:
1. An overflow of the use_count variable could occur in the case of an incorrect "Get Device ID" response from an IPM controller.
2. The Shelf Manager could terminate abnormally in the case of a SIGPIPE signal.
3. A deadlock could occur in the case of resending SEL events to the RMCP clients that subscribed for event notification using the new event subscription mechanism introduced in 2.4.1.
4. The Shelf Manager could fail while writing FRU Information to a remote IPM controller.
5. The CLI command clia sensor incorrectly translated the sensor type code 0x10 as "Error Logging Disabled" instead of "Event Logging Disabled".
6. When parsing the Shelf FRU Information, the Shelf Manager could incorrectly handle a non-PICMG OEM record with a Record ID corresponding to one of the PICMG-defined records.