PENGUIN™
SOLUTIONS

ATCA Log Collection Utility

Configuration Guide

P/N: 6806800P44H

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EDGE

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About this Manual

Overview of Contents

This manual is divided into the following chapters:

Summary of Changes

The summary of changes is provided in the following table:

Part Number	Publication Date	Description
6806800P44H	August 2022	Rebrand to Penguin Solutions
6806800P44G	January 2020	Rebrand to SMART Embedded Computing.
6806800P44F	July 2017	Added registered trademark to SRstackware.
6806800P44E	July 2015	Re-branded to Artesyn template.
6806800P44D	October 2013	Updated *Chapter 1, Introduction on page 11*, *Table 3-2 on page 22*, and *Help on page 43*.
6806800P44C	September 2013	Updated *Information Collected on page 21*.
6806800P44B	July 2012	GA Release.
6806800P44A	June 2012	Initial version.

Introduction

1.1 Overview

Customers of ATCA platforms need a utility that communicates logs and configuration, when reporting issues to Penguin Solutions. These utilities are required primarily for the following reasons:

- Provide a consistent and automated method for customers and/or Penguin Solutions to gather log data
- Capture pertinent configuration data
- Reduce the possibility of having to go back to the customer to gather additional data
- Lessen the likelihood of missing key data that may necessitate waiting for the event to reoccur
- Improve the triage cycle time of GTAC and enable Engineering to troubleshoot and identify the root cause of an event

1.2 Scope

This document captures the details of the logs, system information, and status information that can be collected using the sysLCU utility. The high-level overview of the tool and its usage is presented in this document.

This utility supports ATCA-F120, ATCA-9305, ATCA-9405 and ATCA-F140 blades and captures blade-level logs and not system-level logs. The utility should be run on the blade and the output tar file should be submitted when raising a service request.

It is expected that the information provided by sysLCU will usually be enough for diagnostic purposes and debugging. The sysLCU utility will provide a snapshot of the system configuration and status.

The sysLCU utility is strictly for gathering data. Although this data is useful, it may not provide the root cause for the customer reported issue. The standard procedures of having reproducible test case, access to system in problem state, and so on may still be required to find the root cause. Some data may be lost upon a reboot. Therefore, running the tool after rebooting the system from problem state may not help in gathering all data unless the logs were stored in persistent storage.

1.3 Target Audience

This document is written for users of the utility as well as the users of the logs.

Based on the service requests, the logs collected and the script that collects the logs will be modified. Also, the utility may be modified to include additional features.

It is expected that the readers of the document are familiar with Penguin Edge product documentation. The acronyms and abbreviations are not expanded here. The readers can refer to standard Penguin Edge documentation for the definitions.

Overview

2.1 Introduction

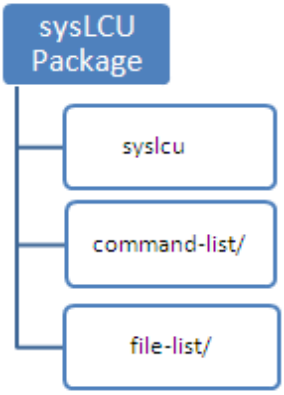
The sysLCU utility is a shell script. Internally it uses "Expect" scripting language. The "Expect" scripting language is used when a command-line of Broadcom switch or SRStackware® subsystem has to be used to gather information and/or status.

The sysLCU utility will be bundled with respective blade releases. This script can be run on a blade with any known deployed version of BBS release. The script gathers the logs and status information.

2.2 Design

The sysLCU package consists of the "syslcu" script and configuration files in the directories shown below:

Figure 2-1 Design



The files in the command-list sub-directory contain files which specify the list of commands to gather data. These text files have to follow a specific syntax to allow the utility to function properly. The syntax allows the user to specify the commands to be run and the file path and name to store command output.

The text files in the file-list sub-directory specify the list of log and configuration files to copy from the target.

There can be any number of files in the directories. All the files with conf extension are processed by the utility. The type of information that is gathered from each type of blade can be customized without modifying the utility.

2.3 The command-list Directory

The text files in this directory contain the commands to be run to gather configuration data. The syntax of these files is shown below:

```
@START
++ <Path> <Shell> [<BCM-CHIPSET-RANGE>]
<command>:<output-file>
.
.
@END
```

Table 2-1 Command List

Keyword/Special Character	Description
@START	This denotes the start of a block of commands to be run.
@END	This denotes the end of the block of commands to be run.
++	This is the first line in a block of commands. It will create a sub-directory which is specified after "++". It will also specify the type of shell in which the commands have to be executed.
<Path>	The file path in which the output file is kept. This helps in segregating the information into various directories. This is common for a block of commands.
<Shell>	This gives the shell in which the command has to be run. The valid values are BASH_SHELL, BCM_SHELL and IMISH_SHELL. The BCM_SHELL is the Broadcom Switch Shell and the IMISH_SHELL is the SRStackware shell. The commands for these two shells are run using Expect. The BASH_SHELL commands are the ones which can be run on bash shell.
<BCM-CHIPSET-RANGE>	This option is applicable only for BCM_SHELL. The BCM_SHELL can specify the Broadcom chipsets to run the commands on. This has to be specified as a range. E.g. 0-2 => Run the command set on BCM0, BCM1 and BCM2 1-2 => Run the command set on BCM1 and BCM2 1-1 => Run the command set only on BCM1 Note: This option if specified with either BASH_SHELL or IMISH_SHELL will be ignored and the script doesn't throw any error.
<command>	The command to run to generate required information. The actual command to be run has to be specified.

Table 2-1 Command List (continued)

Keyword/Special Character	Description
:	This is the delimiter between the command and the output-file name where the output of the command has to be stored.
<output-file>	Each command can specify the file in which the output captured after the command is run is stored.
#	Any line starting with this character is treated as a comment and not processed by the utility.

An example of the command-list file is shown below:

```
# This will create a BBS/version directory and all commands
# will be run on bash shell
# The output files specified below next to the commands will
# be stored in BBS/version directory
@START
++ BBS/version BASH_SHELL
#The output is stored in bbs-release.txt file
cat /etc/blade-release:bbs-release.txt
uname -a:uname.txt
fcu -q:firmware-versions.txt
rpm -qa:rpm-versions.txt
@END

# This will create a BCM directory and run commands in BCM
# shell. The commands will be run on 3 Broadcom chips
@START
++ BCM BCM_SHELL 0-2
vlan show:bcmShell_port-vlan.txt
dump soc diff:bcmShell_DumpSocdiff.txt
show counters:bcmShell_show-counters.txt
show counter ITXPF:bcmShell_show-counter-ITXPF.txt
show counter IRXPF:bcmShell_show-counter-IRXPF.txt
show counters GTXPF:bcmShell_show-counters-GTXPF.txt
dump socmem diff:bcmShell_dump-socmem-diff.txt
@END
```

```
# This will create a SRS/gvrp directory and run commands in
# IMISH shell
@START
++ SRS/gvrp IMISH_SHELL
show gvrp configuration:show-gvrp-config.txt
show gvrp statistics:show-gvrp-stat.txt
@END
```

2.4 The file-list Directory

This directory contains the text files which specify the log and configuration files to be copied from the target. The syntax for the configuration files is simpler. It is as below:

```
   @START
   ++ <Sub-Directory>
   <file>
   .
   .
   @END

An example is
   @START
   ++ BBS/etc
   /etc/fstab
   /etc/sysctl.conf
   /etc/exports
   @END
```

Here a BBS/etc sub-directory is created and all the files are copied into it. Note that the file is copied and no directories are created as part of copy. It is important to specify the full path of the file to be copied in the configuration files in the file-list directory.

2.5 Tool Output File

The tool should be run by the 'root' user. The logs are captured in a tar file available in the target directory.

In case of ATCA-F120, the default target directory for log collection is /tmp/syslcu.

In ATCA-9305, by default logs will be stored in /mnt/flash.

The tar file naming convention is as follows:

- Tool run with -s option (SR details are known)

  The tar file name will be as below when the tool is used with "-s" option. The "-s" option gives flexibility to the user to either specify a Service Request number or a string for easy reference.

  `sysLCU-ATCA-BBBB-SR-XXXXX_YYYYMMDDHHMMSS.tar.gz`

  In this tar file name:

`BBBB`	The blade product on which the utility is run. The valid values are F120 and 9305.
`XXXXX`	This is either SR number or any string (without spaces) to identify the output tar. This is specified at the time of starting the utility. This will be prefixed with "SR-" in the output tar file name.
`YYYYMMDDHHMMSS`	The date and time when the utility was started.

- Tool run without -s option (SR details are not known)

  When the SR details are not known, you can run the tool without specifying the -s option. In this case, the tool picks up the serial number of the blade and uses it in the tar file name. In this case the name of the tar file will be as below:

  `sysLCU-ATCA-BBBB-SN-XXXXXXXXXXXX_YYYYMMDDHHMMSS.tar.gz`

  In this tar file name:

`XXXXXXXXXXXX`	It is the substring that denotes the serial number of the blade. It will be prefixed with "SN-" in the output tar file name.

  The other fields are same as in the above *Tool run with -s option (SR details are known)*.

- Tool run with -t option

  When sysLCU utility runs with -t option, the tool removes SR/SN string and date from the log tar file name. This option can be used if shorter output file name is required. In this case the name of the tar file will be as follows:

  `sysLCU-ATCA-BBBB-HHMMSS.tar.gz`

Examples:

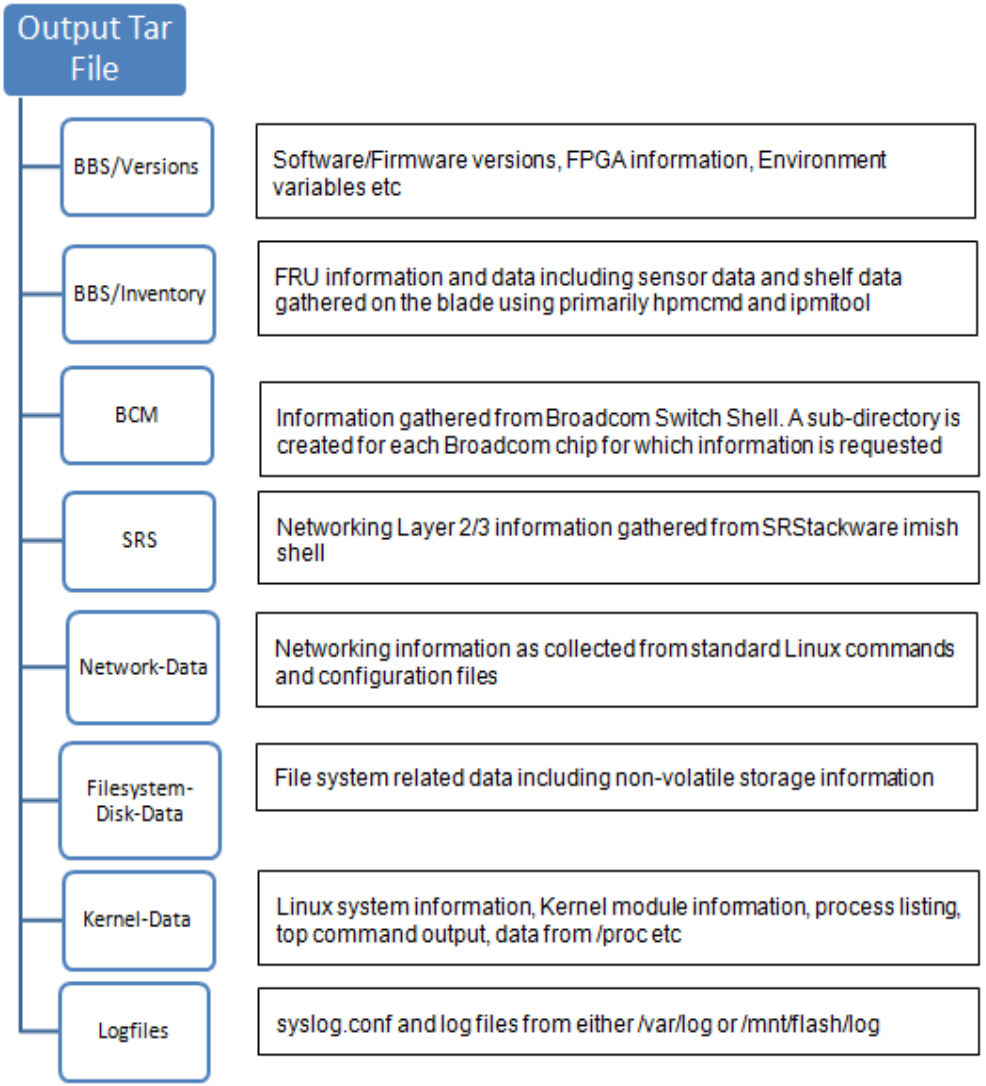
Some examples of the output file name are as follows:

- Tool run on May 18, 2012 with SR number 999999 and -s option on ATCA-9305: sysLCU-ATCA-9305-SR-999999_20120518101558.tar.gz
- Tool run on May 18, 2012 with the string "Blade_Outage" and -s option on ATCA-9305: sysLCU-ATCA-9305-SR-Blade_Outage_20120518101558.tar.gz
- Tool run on June 6, 2012 without specifying -s option on ATCA-F120: sysLCU-ATCA-F120-SN-2130124A3GAB_201206068115444.tar.gz
- Tool run at 12:18:40 with specifying -t option on ATCA-F120: sysLCU-ATCA-F120-121840.tar.gz

The output tar file of the sysLCU utility consists of the folders shown in the following figure. This layout is as specified in the default files in the `command-list` and `file-list` directories of ATCA-F120 and ATCA-9305. This can be changed by modifying the files in these two directories. A brief explanation of the folders is given below. Detailed information about the logs collected is available in *Chapter 3, Information Collected on page 21*

.

Figure 2-2 Default Layout of the Output Tar File of Data Collected



Information Collected

3.1 Introduction

The various types of logs collected are described below in each section.

Each table lists either the command used or the file name from which the information is collected. If a command is used to gather information - a "#" is prefixed before the command. A brief description of command and the output path and file name containing the information is also listed. This information enables you to locate the required information.

3.2 FRU Information

This type captures software and firmware versions, environment variables including u-boot, and FPGA information (if applicable). In addition, all FRU information available using hpmcmd, ipmitool or ipmicmd is gathered within this type. Shelf data which can be gathered from the blade is also collected. However, the ekeying status is not gathered in this log type.

In the following table, the output files are in `BBS/Version` directory of the tar file.

Table 3-1 FRU Version Information

Command	Description	Output File	Blades Applicable
#cat /etc/blade-release	BBS Version	BBS-Version.txt	ATCA-9305, ATCA-9405, ATCA-F140
#uname -a	Kernel version	Uname-all.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#ipmicmd -k "0f 00 06 1" smi 0	IPMI getDeviceId	IPMI-DevID.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#hpmcmd -c deviceid	HPM FRU version info	HPM-DevID.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140

Table 3-1 FRU Version Information (continued)

Command	Description	Output File	Blades Applicable
#fcu -q	Firmware version	Fcu-Versions.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#rpm -qa	Package information	RPMs-Installed.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#env	Environment variables	ENV-Var.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/device-tree/version	Device Tree version	DeviceTree-Versions.txt	ATCA-9305, ATCA-9405, ATCA-F140
#find /proc/device-tree/u-boot-env -type f -exec grep -Hva '^$' '{}' \;	U-Boot Environment variables	BOOT-Env.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140

In the following table, the output files are present in **BBS/Inventory** directory of the tar file.

Table 3-2 FRU Inventory Information

Command	Description	Output File	Blades Applicable
#ipmitool fru print	Local IPMI FRU data	FRUInv.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#ipmitool sdr elist all	Local IPMI SDR data	FRUInv.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.

Table 3-2 FRU Inventory Information (continued)

Command	Description	Output File	Blades Applicable
#hpmcmd -c macaddress	HPM MAC data	FRUInv.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c bootbankget 0	HPM bootbank	FRUInv.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c bootparamget USER	HPM boot parameter	FRUInv.txt	ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c fruinfoget 0	HPM FRU 0 data	FRUInv.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c fruinfoget 1	HPM FRU 1 (RTM) data	FRUInv.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c ledget 0 led0	Status of FRU 0 HotSwap(BLUE) LED	fru_0_led0.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c ledget 0 led1	Status of FRU 0 RED LED	fru_0_led1.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c ledget 0 led2	Status of FRU 0 GREEN LED	fru_0_led2.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c ledget 0 led3	Status of FRU 0 AMBER LED	fru_0_led3.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.

Table 3-2 FRU Inventory Information (continued)

Command	Description	Output File	Blades Applicable
#hpmcmd -c sdrinfo	HPM FRU SDR info	FRUInv.txt	ATCA-F120, ATCA-9305, ATCA-F140, ATCA-9405.
#hpmcmd -c ledget 1 led0	Status of FRU 1 HotSwap(BLUE) LED	fru_1_led0.txt	ATCA-F120, ATCA-F140, ATCA-9305.
#hpmcmd -c ledget 1 led1	Status of FRU 1 RED LED	fru_1_led1.txt	ATCA-F120, ATCA-F140, ATCA-9305, ATCA-9405.
#hpmcmd -c ledget 1 led2	Status of FRU 1 GREEN LED	fru_1_led2.txt	ATCA-F120, ATCA-F140, ATCA-9305
#hpmcmd -c ledget 1 led3	Status of FRU 1 AMBER LED	fru_1_led3.txt	ATCA-F120, ATCA-F140, ATCA-9305, ATCA-9405.
#hpmcmd -c sdr	HPM FRU SDR	FRUInv.txt	ATCA-F120, ATCA-F140, ATCA-9305, ATCA-9405.
#hpmcmd -c watchdog get	Display Current Watchdog Settings	FRUInv.txt	ATCA-F120, ATCA-F140, ATCA-9305, ATCA-9405.
#sfptool -s	SFP modules inserted into the RTM	sfptool.txt	ATCA-F120, ATCA-9305, ATCA-F140.
nmucmd -c show trx	SFP Modules inserted in to RTM	sfp_modules_info.txt	ATCA-9405.

In the following table, the output files are present in the `root` directory of the tar file.

Table 3-3 Slot Number of the Blade

Command	Description	Output File	Boards Applicable
#hpmcmd -c slotnumber	Logical slot number of the blade	sysLCU_Inv.txt	ATCA-F120, ATCA-9305, ATCA-9405
#hpmcmd -c physlotnumber	Physical slot number of the blade	sysLCU_Inv.txt	ATCA-F120, ATCA-9305, ATCA-9405

Table 3-4 FRU Raw Data Read Using IPMITOOL

Command	Description	Output File	Boards Applicable
#ipmitool fru read 0 fru_0_read_raw;xxd fru_0_read_raw;rm -rf fru_0_read_raw	FRU 0 Raw Data	BBS/Inventory/fru_0_read_raw.txt	ATCA-F120, ATCA-9305, ATCA-9405
#ipmitool fru read 1 fru_1_read_raw;xxd fru_1_read_raw;rm -rf fru_1_read_raw	FRU 1 Raw Data	BBS/Inventory/fru_1_read_raw.txt	ATCA-F120, ATCA-9305, ATCA-9405

In the following table, the output files are available in the `BBS/Inventory` directory of the tar file.

Table 3-5 FRU Sensor Information

Command	Description	Output File	Boards Applicable
#ipmitool sensor list	IPMI FRU sensor data	FRU-Sensors.txt	ATCA-F120, ATCA-9305 ATCA-9405
#ipmitool raw 4 0x2d [1....15]	FRU sensor raw values	FRU_RAW.txt	ATCA-F120 ATCA-9405
#ipmitool raw 4 0x2d [1....47]	FRU sensor raw values	FRU_RAW.txt	ATCA-9305 ATCA-9405

In the following table, the output files are available in the `BBS/Inventory` directory of the tar file. This information is captured for ATCA-F120, ATCA-9305 and ATCA-9405.

Table 3-6 Shelf Inventory Information

Command	Description	Output File
#ipmicmd -k "00 20 00 06 01" smi 0	Local IPMI getDeviceId	ShelfInv.txt
#ipmitool fru print -t 0x20	IPMI shelf FRU data	ShelfInv.txt
#ipmitool sdr elist all -t 0x20	IPMI shelf SDR data	ShelfInv.txt
#hpmcmd -c slotmap	HPM slot map	ShelfInv.txt
#hpmcmd -c shelfslots	HPM shelf slots	ShelfInv.txt
#hpmcmd -c motshelftype Note: This is applicable only for F120.	HPM shelf type	ShelfInv.txt
#hpmcmd -c shelftype Note: This is applicable only for 9305.	HPM shelf type	ShelfInv.txt
#hpmcmd -c fruinfoget 0 -t 20	HPM shelf FRU data	ShelfInv.txt
#hpmcmd -c sdrinfo -t 20	HPM shelf SDR data	ShelfInv.txt

Table 3-7 SDR_DUMP Using IPMITOOL

Command	Description	Output File	Blades Applicable
#ipmitool sdr dump sdr_dump_raw;xxd sdr_dump_raw;rm -rf sdr_dump_raw	SDR raw dump	BBS/inventory/sdr_dump_raw.txt	ATCA-F120, ATCA-9305, ATCA-9405

3.3 Network Information

This type captures all the network layer information as available using the standard Linux commands and configuration files. The ekeying information from hpmcmd output is also gathered in this log type. The Ethernet (Broadcom/Marvell) switch or SRstackware information is not gathered in this log type.

The output files are available in the `Network-Data` directory of the tar file. This information is collected for ATCA-F120, ATCA-9305, ATCA-9405, and ATCA-F140.

Table 3-8 Network Information

Command/Configuration file	Description	Output File
/etc/resolv.conf	DNS resolution configuration file	etc/resolv.conf
/etc/nsswitch.conf	Name service switch configuration file	etc/nsswitch.conf
/etc/hosts	Static table lookup file	etc/ hosts
/etc/sysconfig/network-scripts/* Note: This is applicable only for 9305.	Network config files	etc/sysconfig/network-scripts/*
/etc/services	TCP/IP services file	etc/ services
#hpmcmd -c ekeydownpath Note: This is applicable only for F120.	HPM eKey down path	HPM-port-ekey.txt
#hpmcmd -c ekeyuppath Note: This is applicable only for F120.	HPM eKey up path	HPM-port-ekey.txt
#hpmcmd -c portget	HPM eKey port status	HPM-port-ekey.txt
#ifconfig -a	Interface information	IFCFG-NETSTAT.txt
#netstat -i -n	Interface information (no DNS)	IFCFG-NETSTAT.txt
#netstat -an	Socket information	IFCFG-NETSTAT.txt
#netstat -avn	Extended socket information	IFCFG-NETSTAT.txt
#netstat -p	Socket owner information	IFCFG-NETSTAT.txt
#netstat -rn	Network routing table	IFCFG-NETSTAT.txt
#netstat -s	Network statistics	IFCFG-NETSTAT.txt
#netstat -rvn	Extended routing information	IFCFG-NETSTAT.txt

Table 3-8 Network Information (continued)

Command/Configuration file	Description	Output File
#find /proc/net -type f -exec grep -Hv '^$' '{}' \;	Network information from /proc.	Proc-net.txt
#find/proc/sys -type f -exec grep -Hv '^$' '{}' \;	System information from /proc.	Proc-sys.txt
#find /proc/sysvipc -type f -exec grep -Hv '^$' '{}' \;	SYSV IPC info from /proc.	Proc-sysvipc.txt

3.4 File System Information

This log type collects all information related to file system and configuration files. The output files are present in the `FileSystem-Disk-Data` directory of the tar file. This information is collected for ATCA-F120, ATCA-9305, ATCA-9405, and ATCA-F140.

Table 3-9 File System Information

Command/File	Description	Output File
#cat /proc/filesystems	Filesystems supported by the kernel	FileSystems.txt
/etc/exports	Export file	etc/exports
/etc/fstab	Mount file	etc/fstab
#cat /proc/partitions	Partition information	Partitions.txt
#df -IT	Type information	Disk-Type.txt
#df -lk	Usage information	Disk-Usage.txt
#df -li	Inode information	Inode.txt
#showmount -e	Share information	Disk-Share.txt
#fdisk -l /dev/sd* /dev/hd* /dev/jffs*	SCSI and IDE disk partition tables	Fdisk.txt
#nfsstat -cnrs	NFS statistics	NFS-stat.txt

3.5 Kernel Information

This log type collects the Linux information gathered using the standard Linux commands or reading the /proc file system. The output files are present in the `Kernel-Data` directory of the tar file.

Table 3-10 Kernel Information

Command/File	Description	Output File	Blades Applicable
/etc/sysctl.conf	Kernel limits specified by the user	etc/sysctl.conf	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
/etc/init.d/*	Run level Scripts	etc/init.d/*	ATCA-9305 ATCA-9405, ATCA-F140
/opt/bladeservices/etc/*	BBS configuration files	opt/bladeservices/etc/*	ATCA-9305 ATCA-9405, ATCA-F140
#ulimit -a	User (resource) limits	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#ipcs -a	IPC information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#lsmod	Loaded module info	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#ipcs -l	IPC resource limits	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#sysctl -a	Kernel information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140

Table 3-10 Kernel Information (continued)

Command/File	Description	Output File	Blades Applicable
#free	Memory usage	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#uptime	Uptime	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#uname -a	System name, etc	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#w	Current users	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#ps auwx	Process listing	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#last | head -100	Recent users	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#ls -la /home	Contents of home directory	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#hostid	Host ID	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#top -d 1 -n 4 -b	Display Task	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140

Table 3-10 Kernel Information (continued)

Command/File	Description	Output File	Blades Applicable
#lspci -v	Lists all PCI devices	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/loadavg	Load average	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/ioports	I/O port regions	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/interrupts	Interrupts per each IRQ	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/cpuinfo	CPU status	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405 ATCA-F140
#cat /proc/meminfo	Memory usage	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/swaps	Swap partition information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/slabinfo	Slab information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/locks	Lock information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140

Table 3-10 Kernel Information (continued)

Command/File	Description	Output File	Blades Applicable
#cat /proc/modules	Module information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/cmdline	Kernel Boot Args	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/version	Version information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
#cat /proc/stat	System status information	Kernel-Info.txt	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140

3.6 Ethernet Switch Information

This log type collects the Broadcom or Marvell switch information depending on blade type.

The following table shows the information gathered using the Broadcom CLI shell. All commands are run on both ATCA-F120, ATCA-9305, and ATCA-F140.

Table 3-11 Ethernet Switch Information (BCM)

Command	Description	Output File
vlan show	Display All VLANs	BCM/<chipset number>/bcmShell_port-vlan.txt
dump soc	Dump All SOC registers	BCM/<chipset number>/bcmShell_DumpSoc.txt
getreg OP_BUFFER_TOTAL_COUNT	Display total count of buffer registers	BCM/<chipset number>/bcmShell_getreg-OP_BUFFER_TOTAL_COUNT.txt

Table 3-11 Ethernet Switch Information (BCM) (continued)

Command	Description	Output File
getreg OP_QUEUE_TOTAL_COUNT	Display total count of queue registers	BCM/<chipset number>/bcmShell_getreg-OP_QUEUE_TOTAL_COUNT.txt
get l2_age_timer	Display mac age timer of unit	BCM /<chipset number>/bcmShell_get-l2_age_timer.txt
fp show	Display field processor status of unit	BCM /<chipset number>/bcmShell_fp-show.txt
show statistics	Display SNMP accumulated statistics	BCM /<chipset number>/bcmShell_show-statistics.txt
ps	Display info about port status	BCM /<chipset number>/bcmShell_ps.txt
pw	Packet Watcher	BCM /<chipset number>/bcmShell_pw.txt
trunk show	Display trunk information	BCM /<chipset number>/bcmShell_trunk-show.txt
l2 show	Display L2 addresses associated with port(s)	BCM /<chipset number>/bcmShell_l2-show.txt
l3 l3table show	Display all l3 table or a single one	BCM /<chipset number>/bcmShell_l3-l3table-show.txt
show counters	Display counters statistics	BCM /<chipset number>/bcmShell_show-counters.txt
show counter ITXPF	Display counter of transmit PAUSE frame (xe port)	BCM /<chipset number>/bcmShell_show-counter-ITXPF.txt
show counter IRXPF	Display counter of receive PAUSE frame (xe port)	BCM /<chipset number>/bcmShell_show-counter-IRXPF.txt

Table 3-11 Ethernet Switch Information (BCM) (continued)

Command	Description	Output File
show counters GTXPF	Display counter of transmit PAUSE frame (ge port)	BCM /<chipset number>/bcmShell_show-counters-GTXPF.tx
dump socmem diff	Display only memories not equal to their reset defaults	BCM /<chipset number>/bcmShell_dump-socmem-diff.txt

The following table shows the information gathered using the AppDemo CLI shell. All commands are run on ATCA-9405.

Table 3-12 Ethernet Switch Information (Marvell)

Command	Description
rtm_sfp_scan	Displays RTM SFP information
rtm_sfp_sensors	Displays RTM SFP information
mvAxShow	Displays fabric, RTM, octeon 1,2 interfaces information
mvAxSerdesShow	Displays fabric, RTM, octeon 1,2 interfaces information
portLLShow	Displays fabric, RTM, octeon 1,2 interfaces information
serdesShow	General serdes information
portShow	Show port states
portCountShow	Show all port counters
l2Show	Dump L2 table for all ports or a specific port
bufferShow	Show current buffer usage
vlanShow	Show (all) vlans
fcProfileShow	Display flow control configuration
Version	Display library version

3.7 SRstackware Information

This log type lists the SRstackware configuration and the L2/L3 protocol information. The following table lists the information gathered using the imish shell provided. The output files are in the SRS directory of the tar file. All the commands are applicable for ATCA-F120, ATCA-9305 and ATCA-9405.

Table 3-13 SRstackware Information

Command/File		Description	Output File
/etc/opt/srstackware/config/ *		SRS configuration files	etc/opt/srstackware/config/*
/opt/srstackware/scripts/*		SRS configuration scripts	opt/srstackware/scripts/*
Traffic Control	show access-list	Display the list of IP access lists	traffic_control/show-access-list.txt
	Show ip access-list	Display Access List	traffic_control/show-ip-access-list.txt
	show ip prefix-list	Display the prefix list entries	traffic_control/ show-ip-prefix-list.txt
	show rule match-list	Display match-list complete info	traffic_control/show-rule-match-list.txt
	show paired-links	Display paired links	traffic_control/show-paired-links.txt
	show flow control	Display flow control information	traffic_control/show-flow-control.txt
	show storm-control	Display interfaces configured with storm control and the state of each	traffic_control/show-storm-control.txt
XSTP	show spanning-tree	Display the state of the spanning tree for all named bridge groups	xstp/show- span-tree.txt
	show spanning-tree mst detail	Display MST detail information	xstp/show-span-tree-mst-detail.txt
	show spanning-tree mst config	Display MST config information	xstp/show-span-tree-mst-config.txt

Table 3-13 SRstackware Information (continued)

Command/File		Description	Output File
LACP	show etherchannel	Display etherchannels in a channel group	lacp/show-etherchannel.txt
	show etherchannel detail	Display detailed information about all LACP channels	lacp/show-etherchannel-detail.txt
	show etherchannel summary	Display a summary of all LACP channels	lacp/show-etherchannel-summary.txt
	show lacp sys-id	Display LACP system id and priority	lacp/show-lacp-sys-id.txt
	show lacp-counters	Display the packet traffic on all ports of all present LACP aggregators	lacp/show-lacp-counters.txt
QOS	show qos-access-list	Display IP and MAC ACLs	qos/show-qos-access-list.txt
	show mls qos	Display queuing and scheduling information	show-mls-qos.txt
	show policy-map	Display QoS policy map information	qos/show-policy-map.txt
GVRP	show gvrp configuration	Display GVRP configuration	gvrp/show-gvrp-config.txt
	show gvrp statistics	Display GVRP Statistics	gvrp/show-gvrp-stat.txt
GMRP	show gmrp configuration	Display GMRP configuration	gmrp/show-gmrp-config.txt
	show gmrp machine	Display state machine for GMRP	gmrp/show-gmrp-machine.txt
VLAN	show vlan brief	Display information about all VLANs configured for all bridges	vlan/show-vlan-brief.txt
	show vlan static-ports	Display static egress/forbidden ports	vlan/show-vlan-static-ports.txt

Table 3-13 SRstackware Information (continued)

Command/File		Description	Output File
BRIDGE	show bridge	Display learnt mac	bridge/show-bridge.txt
	show bridge ieee	Display forwarding information of STP Bridges	bridge/show-bridge-ieee.txt
	show bridge mstp	Display forwarding information of MSTP Bridges	bridge/show-bridge-mstp.txt
	show arp	Display ARP table	bridge/show-arp.txt
IGMP	show ip igmp groups	Display IGMP group membership information	igmp/show-ip-igmp-groups.txt
	show ip igmp interface	Display IGMP interface information	igmp/show-ip-igmp-interface.txt
	show ip igmp proxy	Display Proxy information	igmp/show-ip-igmp-proxy.txt
RIP	show ip protocols rip	Display RIP process parameters and statistics	rip/show-ip-protocols-rip.txt
	show ip rip	Display RIP routes	rip/show-ip-rip.txt
	show ip rip database	Display information about the RIP database	rip/show-ip-rip-db.txt
	show ip rip interface | inc up	Display information about the RIP up interfaces	rip/show-ip-rip-interface.txt

Table 3-13 SRstackware Information (continued)

Command/File		Description	Output File
OSP	show ip protocols ospf	Display OSPF process parameters and statistics	ospf/show-ip-protocol-ospf.txt
	show ip ospf	Display OSPF information	ospf/show-ip-ospf.txt
	show ip ospf route	Display the OSPF routing table	ospf/show-ip-ospf-route.txt
	show ip ospf database	Display Database summary	ospf/show-ip-ospf-db.txt
	show ip ospf database router	Display R outer link states	ospf/show-ip-ospf-db-router.txt
	show ip ospf database network	Display Network link states	ospf/show-ip-ospf-db-network.txt
	show ip ospf database external	Display External link states	ospf/show-ip-ospf-db-external.txt
	show ip ospf database summary	Display Network summary link states	ospf/show-ip-ospf-db-summary.txt
	show ip ospf database asbr-summary	Display ASBR summary link states	ospf/show-ip-ospf-db-asbr-summary.txt
	show ip ospf database nssa-external	Display NSSA external link state	ospf/show-ip-ospf-db-nssa-external.txt
	show ip ospf database max-age	Display LSAs in MaxAge list	ospf/show-ip-ospf-db-max-age.txt
	show ip ospf neighbor detail	Display detail of all neighbors	ospf/show-ip-ospf-neighbot-detail.txt
	show ip ospf virtual-links	Display Virtual link information	ospf/show-ip-ospf-virtual-link.txt
	show ip ospf border-routers	Display Border and Boundary Router Information	ospf/show-ip-ospf-border-routers.txt
	show ip ospf interface	Display Interface information	ospf/show-ip-ospf-interface.txt
	show router-id	Display router id	ospf/show-router-id.txt

Table 3-13 SRstackware Information (continued)

Command/File		Description	Output File
RPING	show ipv6 protocols rip	Display IPv6 routing protocol process parameters and statistics	ipv6/show-ipv6-protocols-rip.txt
	show ipv6 rip	Display IPv6 RIP information	ipv6/show-ipv6-rip.txt
	show ipv6 rip database	Display IPv6 RIP database	ipv6/show-ipv6-rip-db.txt
	show ipv6 rip interface | include up	Display IPv6 RIP interface status and configuration	ipv6/show-ipv6-rip-interface.txt
MISCELLANEOUS	show ip route	Display IP routing table	misc/show-ip-route.txt
	Show ip interface brief	Display brief information about interfaces	misc/show-ip-interface-brief.txt
	show ipv6 route	Display IPv6 routing table	misc/show-ipv6-route.txt
	show ip forwarding	Display IP forwarding status	misc/show-ip-forwarding.txt
	show ipv6 forwarding	Display IPv6 forwarding status	misc/show-ipv6-forwarding.txt
	show mirror	Display the status of all mirrored ports	misc/show-mirror.txt
	show interface	Display all interfaces statistics	misc/show-interface.txt
	show statistics	Display statistics	misc/show-statistics.txt
	show vrrp	Display information about all VRRP sessions	misc/show-vrrp.txt
	show running-config	Displays the current configuration	misc/show-srs_running-config.txt
	show history	Displays the history of commands executed by the user in imish	misc/show-srs_imish-history.txt

Table 3-13 SRstackware Information (continued)

Command/File		Description	Output File
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost ospf	SNMP walk over ospf mib	snmp/ospf_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost dot1dBridge	SNMP walk over dot1dBridge	snmp/dot1dBridge_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost pBridgeMIB	SNMP walk over pBridgeMIB	snmp/pBridgeMIB.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost qBridgeMIB	SNMP walk over qBridgeMIB	snmp/qBridgeMIB.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost lag	SNMP walk over lag mib	snmp/lag_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost dot1sStp	SNMP walk over stp min	snmp/dot1sStp_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost pBridge	SNMP walk over pBridge mib	snmp/pBridge_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost qBridge	SNMP walk over qBridge mib	snmp/qBridge_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost rip2	SNMP walk over RIP-MIB	snmp/rip2_mib.txt

Table 3-13 SRstackware Information (continued)

Command/File		Description	Output File
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost rmon	SNMP walk over rmon mib	snmp/rmon_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost srsMIB	SNMP walk over SRS-MIB	snmp/srsMIB_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost vrrpMIB	SNMP walk over VRRP-MIB	snmp/vrrpMIB_mib.txt
	#/usr/bin/snmpwalk -v3 -u admin -A adminpwd123 localhost IF	SNMP walk over IF-MIB	snmp/IF_mib.txt

3.8 Linux Log Files

This log type captures the system logs such as message, syslog, and dmesg command output. The output files are present in the `Logfiles` directory of the tar file.

Table 3-14 Linux Log Files

Command/File	Description	Output File	Boards applicable
/etc/syslog.conf	syslog configuration file	etc/syslog.conf	ATCA-F120, ATCA-9305, ATCA-9405, ATCA-F140
/mnt/flash/log/message*	Main log file	mnt/flash/log/message*	ATCA-9305
/mnt/flash/log/snmpd.log	SNMP log	mnt/flash/log/snmpd.log	ATCA-9305
/mnt/flash/log/supervisor.log	Supervisor log	mnt/flash/log/supervisor.log	ATCA-9305
/mnt/flash/log/syslog*	Main syslog file	mnt/flash/log/syslog*	ATCA-9305
/mnt/flash/log/dmesg	Dmesg File	mnt/flash/log/dmesg	ATCA-9305
/var/log/*	Complete /var/log contents	var/log/*	ATCA-F120, ATCA-F140, ATCA-9405

Table 3-14 Linux Log Files (continued)

Command/File	Description	Output File	Boards applicable
/mnt/flash/log/srstackware*	SRStackware log files	mnt/flash/log/srstackware*	ATCA-9305
/mnt/flash/log/authlog	Authentication log	mnt/flash/log/authlog	ATCA-9305

The sysLCU utility does not capture crash file(s) from boards. However, it will notify if any crash files have been generated in `/var/crash` directory at the end of execution note. You should provide this crash file along with the master tar file.

Usage

4.1 Overview

The sysLCU utility should be run locally on a blade. It does not support remote capture. The command-line options for this utility are given below:

4.2 Help

The help message will be displayed with either `-h` option or if an invalid option is given. The output of this option will be as shown below.

`-d` Target directory for collected information (`default/tmp/syslcu` on ATCA-F120 , `mnt/flash` on ATCA-9305 and `/pcfg/etc` on ATCA-9405)

`-s` Service Request ID

`-t` Remove SR/SN string and date in tar output file name

`-h` Display help message

`-V` Version Number of sysLCU

4.3 Target Directory

The dump directory can be defined with -d option. In case of ATCA-F120, the default (without -d option) target directory for logs collection is `/tmp/syslcu` directory, in ATCA-9305, by default log will be stored in `/mnt/flash` and in ATCA-9405, by default log will be stored in `/pcfg/etc`.The sysLCU script deletes all the temporary files created after the output file is generated.

4.4 Service Request ID

This parameter will take Penguin Edge service request number or any string (without spaces) with -s option. The service request number will be used in the master tar file name.

If the service request number is not known, a string with no spaces can be passed to help in easy identification of the output tar file.

If this option is not specified, the serial number of the board will be used in the output tar file name.

4.5 Trim Log Output Tar Name

This option removes SR/SN string and date from log output filename and is specified using -t.

4.6 Version Number

This option returns utility version information and is specified using -V.

Termination of sysLCU in the middle of execution (by pressing Ctrl+c) will not collect any log.

Distribution Package

5.1 Overview

This version of the utility is distributed as a blade specific package which can be installed on the blade. Therefore there are three packages - one for ATCA-F120, one for ATCA-9305 and one for ATCA-9405.

5.2 Contents of the Distribution Package

The sysLCU package contains the following files:

Table 5-1 Distribution Package Contents

File	Description
`syslcu`	The utility script which has to be run to collect information.
`README`	This file contains installation instructions, usage of the tool, and also the syntax of the configuration files.
`command-list sub-directory`	This directory contains all the files which collect information by running specified commands.
`command-list/command-list.conf`	This file contains most of the commands which have been detailed in the sections above.
`command-list/fru-raw.conf`	The "ipmitool raw" commands have been put in separate file as these are blade specific. This makes it easier to customize for each blade.
`command-list/snmpwalk-over-mibs.conf`	Contains the SNMP commands for SRS MIBs.
`file-list sub-directory`	This directory contains the files which collect information by copying files from the target.
`file-list/file-list.conf`	All files to be copied from the target are specified in this file.
`ChangeLog`	This file covers changes into package till now

5.3 Installation of the package

Copy the blade specific sysLCU rpm on the target blade and install using the following command.

```
rpm -ivh syslcu.atcaXXXX-<version>-<release>.noarch.rpm
```

A `syslcu` directory is created in `/opt/bladeservices/etc` and all the files bundled with this package will be copied in `/opt/bladeservices/etc/syslcu` directory.

The sysLCU utility can be run without specifying any options. It will run with default options.

5.4 Performance

The script takes approximately 3 minutes to run on the ATCA-F120 and 10 minutes to run on ATCA-9305. The output tar file sizes are less than 2 MB on both the blades.

5.5 Known Issues and Limitations

Known issue:

Gzip returns the following error though compressing is done successfully:

```
gzip: /usr/bin/gzip: Too many levels of symbolic links
```

This message is not seen by the user as it is redirected to `/dev/null`.

Limitations:

- Disk usage check is not done before collecting logs and generating the output tar file. Ensure that enough space is available on the disk for running this utility. At least 100 MB free space is required in the target dump directory for the script to execute. A check will be added in future versions based on the feedback received after testing this package.
- The ipmitool version 1.8.8 (on ATCA-F120 and ATCA-9305) does not support "ipmitool sel" to capture sel log. Therefore, these commands have not been added.
- Since the utility does not run on the Octeon processor, the FPGA dump cannot be collected from an ATCA-9305 board.

Conclusion

The sysLCU utility is expected to gather adequate logs, status, and configuration information which will help in quicker triage of service requests. However, there may be a few service requests that may require additional effort to capture the required information for troubleshooting.

The sysLCU utility is not a replacement for standard practices such as providing a reproducible test case with only Penguin Edge provided software. This utility should be viewed as a tool that assists in troubleshooting based on all the information gathered. Also, it will help in eliminating standard requests for additional information.

In addition to gathering information using the sysLCU utility, it is suggested to provide information as listed in *Chapter 7, Additional Information for Service Request on page 49*. The data such as the site where the issue is seen, usage of Penguin Edge product, date and time of the issue and the user view of the issue will help in putting the right focus on the issue. The additional information requested should be provided when raising a service request in the CRC portal.

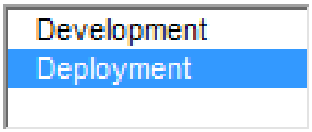
Conclusion

Additional Information for Service Request

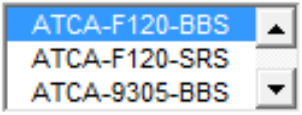
Name of site the issue is observed at:

Approximate Date and time stamp of when the issue is observed:

Issue Reported at Deployment/Development Site:



Issue Observed on:



BBS SW Version being used:

SRS SW Version being used:

Problem Description (including any recent changes to Hardware or Software)

Type of the Service Request:

- ○ Question
- ○ Enhancement Request
- ○ Kernel Panic
- ○ Board Hung
- ○ HW Failure

Additional Information for Service Request

Protocols Being Used at Deployment/Development Site:

(Check all applicable protocols)

- ☐ RIP
- ☐ OSPF
- ☐ STP
- ☐ RSTP
- ☐ MSTP
- ☐ Match Rules
- ☐ LACP (PO/SA)
- ☐ VRRP
- ☐ VLANS
- ☐ QoS
- ☐ GMRP
- ☐ GVRP
- ☐ RIPng

Did you run the Log Collection Utility?

- ☐ Yes
- ☐ No

Related Documentation

A.1 Penguin Solutions™ Documentation

Technical documentation can be found by using the Documentation Search at *https://www.penguinsolutions.com/edge/support/* or you can obtain electronic copies of documentation by contacting your local sales representative

Table A-1 Penguin Edge Documentation

Document Title and Source	Document Number
SRstackware on ATCA-9305 Troubleshooting Guide	6806800K17
SRstackware on ATCA-9305 VRRP Command Reference	6806800K18
SRstackware on ATCA-9305 RIP Command Reference	6806800K19
SRstackware on ATCA-9305 Layer 2 Configuration Guide	6806800K21
SRstackware on ATCA-9305 OSPF Command Reference	6806800K22
SRstackware on ATCA-9305 Layer 2 Command Reference	6806800K23
SRstackware on ATCA-9305 Layer 3 Configuration Guide	6806800K24
SRstackware on ATCA-9305 Protocol Demo Guide	6806800K25
SRstackware Intelligent Network Software Switch Configuration Command Reference	6806800M17
SRstackware Intelligent Network Software Layer3 Command Reference	6806800M18
SRstackware FAQ	6806800K96

Related Documentation

PENGUIN™
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