Internet Corporation for Assigned Names and Numbers

Root DNSSEC HSM Acceptance Testing Ceremony

Thursday March 19, 2015

ICANN KSK Facility@Terremark NCR
18155 Technology Drive, Culpeper, VA 22701-3805

This ceremony is executed under the
DNSSEC Practices Statement for the Root Zone KSK Operator Version A Revision 1358

Abbreviations

TEB =	Tamper Evident Bag (AMPAC, item #GCS1013 small or #GCS1216 large or MMF Industries, item #2362010N20 small or #2362011N20 large)				
HSM =	Hardware Security Module	**FD =**	Flash Drive	**CA =**	Ceremony Administrator
IW =	Internal Witness	**CO =**	Crypto Officer	**SA =**	System Administrator
SSC =	Safe Security Controller	**MC =**	Master of Ceremony	**IKOS =**	ICANN KSK Operations Security
KSR =	Key Signing Request	**SKR =**	Signed Key Response	**RZM =**	Root Zone Maintainer
AUD =	Third Party Auditor	**EW =**	External Witness		

Participants

Instructions: At the end of the ceremony, participants sign on IW1's copy. IW1 records time upon completion.

Title	Printed Name	Signature	Date	Time
CA	Francisco Arias/ ICANN		19 March 2015	1735
IW1	Alberto Duero/ ICANN			
SSC1	Julie Hedlund/ ICANN			
SA1	Reed Quinn / ICANN			
IW2 / IKOS	Andres Pavez / ICANN			
Staff Witness	Edward Lewis / ICANN			

Note: By signing this script, you are declaring that this is a true and accurate record of the Root DNSSEC KSK ceremony to the best of your knowledge.

Note: Dual Occupancy enforced. CA leads ceremony. Only CAs, IWs, or SAs can enter ceremony room and/or escort other participants. Only CA+IW can enter safe room and/or escort other participants. CAs, SAs or IWs may let individuals out of the ceremony room but only when CA+IW remain in the ceremony room. No one may leave when CA+IW are in safe room. Participants must sign in and out of ceremony room and leave any credentials assigned to them (keys, cards) in the ceremony room if leaving before completion of the ceremony. The SA starts filming before the participants enter the room.

Some steps during the ceremony require the participants to tell and/or confirm identifiers composed of numbers and letters. When spelling identifiers, the phonetic alphabet shown below will be used:

A	Alfa	AL-FAH
B	Bravo	BRAH-VOH
C	Charlie	CHAR-LEE
D	Delta	DELL-TAH
E	Echo	ECK-OH
F	Foxtrot	FOKS-TROT
G	Golf	GOLF
H	Hotel	HOH-TEL
I	India	IN-DEE-AH
J	Juliet	JEW-LEE-ETT
K	Kilo	KEY-LOH
L	Lima	LEE-MAH
M	Mike	MIKE
N	November	NO-VEM-BER
O	Oscar	OSS-CAH
P	Papa	PAH-PAH
Q	Quebec	KEH-BECK
R	Romeo	ROW-ME-OH
S	Sierra	SEE-AIR-RAH
T	Tango	TANG-GO
U	Uniform	YOU-NEE-FORM
V	Victor	VIK-TAH
W	Whiskey	WISS-KEY
X	Xray	ECKS-RAY
Y	Yankee	YANG-KEY
Z	Zulu	ZOO-LOO
1	One	WUN
2	Two	TOO
3	Three	TREE
4	Four	FOW-ER
5	Five	FIFE
6	Six	SIX
7	Seven	SEV-EN
8	Eight	AIT
9	Nine	NIN-ER
0	Zero	ZEE-RO

Act 1. Initiate Ceremony and Verify the Chain of Cusdoty

Participants Arrive and Sign into Key Ceremony Room

Step	Activity	Initials	Time
1.	SA confirms that all audit cameras are recording.	AD	1434
2.	IW1 confirms that all participants are signed into the Ceremony Room.	AD	1435

Emergency Evacuation Procedures

Step	Activity	Initials	Time
3.	CA or IW1 reviews emergency evacuation procedures with participants.	AD	1435

Verify Time and Date

Step	Activity	Initials	Time
4.	IW1 enters UTC date (day/month/year) and time using a reasonably accurate wall clock visible to all in the Ceremony Room: Date and time: 19/03/2015 14:35 All entries into this script or any logs should follow this common source of time.	AD	1436

Verify Chain of Custody

Step	Activity	Initials	Time
5.	CA and IW1 unpack the HSMs boxes while leaving HSMs enclosed in vendor supplied TEBs.	AD	1442
6.	CA and IW1 match HSMs serial number and vendor TEBs to digitally signed email from the vendor Figure 1. If these do not match, re-package HSMs, terminate the ceremony and return HSMs. **HSM: TEB# 02668317 / serial # H1403032** ✓ **HSM: TEB# 02668318 / serial # H1411011** ✓	AD	1445

RE: Shipment Details UE00610 (Culpeper)

Peter Clements

Sent: Monday, March 9, 2015 at 1:11

To: Andres Pavez

Cc: Daryl Hyett; Rob Stubbs; Punky Duero; jrose@citsus.com

This message was digitally signed by "Peter.Clements@ULTRA-AEP.COM". Details

For the attention of Andres Pavez and Alberto Duero at ICANN,

Please find details of your order dispatched on 25/02/2015. This email has been signed with a digital signature as requested. Please let me know if you require any further assistance.

This is a part shipment as per your schedule. The destination is Terremark Facility, Culpeper.

Your order has been dispatched please see details below:

Date	25/02/15
Customer PO#	PO# 15JR7177
AEP Ref#	UE00610
Courier Used	Fedex
AWB/Tracking #	772987504130
Product Type	KEY-PLUS

Serial Number	Tamper Bag Ref
H1403032	02668317
H1411011	02668318

Upon receipt please check that the serial number and tamper evident bag number match the details above. If they do not it could indicate the goods have tampered with. If you believe the goods have been tampered with during transit please contact AEP immediately at customerorders@ultra-aep.com

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Ultra ELECTRONICS Communication & Integrated Systems

View Certificate

GlobalSign
GlobalSign PersonalSign 1 CA - SHA256 - G2
peter.clements@ultra-aep.com

peter.clements@ultra-aep.com
Issued by: GlobalSign PersonalSign 1 CA - SHA256 - G2
Expires: Thursday, February 25, 2016 at 9:09:48 Pacific Standard Time
This certificate is valid

Details

Common Name	peter.clements@ultra-aep.com
Email Address	peter.clements@ultra-aep.com
Country	BE
Organization	GlobalSign nv-sa
Common Name	GlobalSign PersonalSign 1 CA - SHA256 - G2
Serial Number	66 B4 55 C3 17 BD B0 EB B5 DD 59 EC 65 EA E5 22
Version	3
Signature Algorithm	SHA-256 with RSA Encryption (1.2.840.113549.1.1.11)
Parameters	none
Not Valid Before	Tuesday, February 24, 2015 at 9:09:48 Pacific Standard Time
Not Valid After	Thursday, February 25, 2016 at 9:09:48 Pacific Standard Time
Algorithm	RSA Encryption (1.2.840.113549.1.1.1)
Parameters	none
Public Key	256 bytes : F8 30 0C 32 AE 7D E2 53 ...
Exponent	65537
Key Size	2048 bits
Key Usage	Encrypt, Verify, Wrap, Derive

OK

Figure 1

Act 2. Perform the HSM Acceptance Testing

Set Up Laptop

Step	Activity	Initials	Time
1.	CA takes the general purpose laptop, connects laptop power, external display, printer and boots laptop from test O/S DVD (same of production version which is **publicly** available).	AD	1449
2.	CA sets up the laptop by following the steps below. a) CA presses "CTRL+ALT+F2" to get a console prompt and logs in as root. b) CA executes `system-config-display --noui` c) CA executes `killall Xorg` d) CA confirms that external display works. e) CA logs in as root	AD	1455
3.	CA confirms that the printer is connected then configures printer as default and prints test page by going to **System > Administration > Printing** And follow the steps below: a) Click the **New Printer** icon (left side), leave everything default and then click the button **Forward** b) Under "Select Connection" choose the **first device** "**HP Laserjet xxxx**" and then click the button **Forward** (Note: The xxxx is the Printer Model) c) Select **HP** and click the button **Forward** d) Under "Models" scroll down and select **"Laserjet"**, and then click the button **Forward** e) To finish click the button **Apply** f) Under "Local Printers" from the left menu, select "**printer**" Click the button **"Make Default Printer"** and "**Print Test Page".**	AD	1457
4.	CA opens a terminal window and maximizes its size for visibility by going to **Applications > Accessories > Terminal** Follow the additional steps to maximize the terminal window: a) Click the **View** menu and select **Zoom In** b) Repeat the step above as necessary	AD	1458
5.	CA checks and fixes date and time on laptop based on wall clock ensuring UTC time zone has been chosen by going to **System > Administration > Date & Time** CA executes `date` using the Terminal window to confirm the date is properly configured.	AD	1459

ICANN DNSSEC Script Exception

Abbreviations

TEB = Tamper Evident Bag
HSM = Hardware Security Module
FD = Flash Drive
CA = Ceremony Administrator
IW = Internal Witness
SA = System Administrator
SSC = Safe Security Controller

Instructions: Initial each step that has been completed below. Note time.

Note Exception Time

Step	Activity	Initials	Time
1.	IW1 notes date and time of key ceremony exception and signs here: 19/03/2015 1451		1451
2.	IW1 Describes exception and action below.		

On xfer2 - Non-production laptop that is used for acceptance testing has a problem with the keyboard. Attempted to reboot the laptop

– End of DNSSEC Script Exception –

Format and label blank FD

Step	Activity	Initials	Time

6.	CA plugs a new FD into the laptop, then waits for it to be recognized by the O/S, closes the file system popup window and formats the drive by executing
	`dmesg | grep -A 5 usb-storage`
	to confirm the drive letter that is assigned to the blank USB drive (e.g. sda, sdb, sdc),
	`umount /dev/sda1`
	to unmounts the drive (change drive letter and partition if necessary),
	`mkfs.vfat -n HSMFD -I /dev/sda`
	to execute a FAT32 format and label it as HSMFD.
	CA unplugs the FD.
		AD	1502

7.	CA repeats step 6 for the 2nd blank FD	AD	1502
8.	CA repeats step 6 for the 3rd blank FD	AD	1503

Connect HSMFD

Step	Activity	Initials	Time
9.	CA plugs an empty HSMFD into free USB slot on the laptop and waits for O/S to recognize the FD. CA lets participants view that the HSMFD is empty and then closes the file system window.	AD	1503

Start Logging Terminal Session

Step	Activity	Initials	Time
10.	CA changes the default directory to the HSMFD by executing `cd /media/HSMFD`	AD	1504
11.	CA executes `script script-20150319.log` to start a capture of terminal output.	AD	1504

Start Logging HSM Output

Step	Activity	Initials	Time
12.	CA connects two (2) serial to USB null modem cable to laptop. Note that the first USB cable connected will be "ttyUSB0", the second will be "ttyUSB1".	AD	1506

13.	CA opens a second terminal window and maximizes its size for visibility by going to **Applications > Accessories > Terminal.**
	Follow the additional steps to maximize the terminal window:
	a) Click the **View** menu and select **Zoom In**
	b) Repeat the step above as necessary
	and executes
	`cd /media/HSMFD`
	`stty -F /dev/ttyUSB0 115200`
	`stty -F /dev/ttyUSB1 115200`
	`ttyaudit /dev/ttyUSB0 /dev/ttyUSB1`
	to start logging HSM serial port outputs. Note: **DO NOT** unplug USB serial port from laptop as this causes logging to stop.
		AD	1507

HSM3: Power Up

Step	Activity	Initials	Time
14.	CA inspects the HSM vendor supplied TEB for tamper evidence; reads out TEB # and serial #. IW1 confirms TEB # and serial # below. **HSM: TEB# 02668317/ serial # H1403032**	AD	1509
15.	CA removes HSM from TEB; discards TEB, label the HSM with the label **HSM3** and plugs ttyUSB0 null modem serial cable to the back.	AD	1512
16.	CA removes the small packet on top of the HSM3 containing the HSM3 physical key and verify the serial # on the packet matches with the HSM3's serial #, then verify the number in the key matches with the number in the packet. **Note: The HSM physical key is used to enable/disable the LCD display and the Keypad.**	AD	1515
17.	CA returns the physical key inside the small packet and places it in a prepared TEB and seals it. Reads out TEB # and shows it to the participants and IW1 to confirm the TEB # below. **HSM3 Physical Key: TEB# BB21907247**	AD	1517
18.	CA and IW1 initials the TEB and keeps the sealing strips for later inventory. CA then places the TEB on the equipment cart.	AD	1518
19.	CA switches to the ttyaudit terminal window, connects power to HSM3 and turns on by pressing the power switch behind it. Status information should appear on the serial logging screen and after self test the HSM3 display should say **"Important Read Manual"** indicating the HSM3 is in the initialized state. IW1 matches displayed HSM3 serial number and the application version with below. **HSM3: Serial # H1403032** **Keyper Application: v2.3**	AD	1520

HSM3: Issuing Security Officer (SO) Cards

Step	Activity	Initials	Time
20.	CA will perform the following steps to make **Security Officer (SO)** cards: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"1.Issue SO Cards"** hit **ENT** to confirm c) When **"Issue SO Cards?"** is displayed, hit **ENT** to confirm d) When **"Num Cards?"** is displayed, enter **"3"** and hit **ENT** to confirm e) When **"Num Req Cards?"** is displayed, enter **"2"** and hit **ENT** to confirm f) When **"Insert Card SO #?"** is displayed, insert the proper sequence of SO card from the cardholder g) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** h) When **"Remove Card?"** is displayed, remove card i) Repeat steps f) to h) for the 2nd and 3rd SO cards j) When **"SO Cards Issued"** Is displayed, hit **ENT** to confirm As each card is created the CA places it in the cardholder.	AD	1524

HSM3: Switching to Secure State

Step	Activity	Initials	Time
21.	CA will perform the following steps to set the HSM Secure State using **Security Officer (SO)** cards: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"3.Secure"** hit **ENT** to confirm c) When **"Secure?"** is displayed, hit **ENT** to confirm d) When **"Insert Card SO #?"** is displayed, insert the SO from the cardholder e) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** f) When **"Remove Card?"** is displayed, remove card g) Repeat steps d) to f) for the 2nd SO card h) When **"SMK AES Triple DES?"** is displayed, hit **CLR** to skip i) When **"SMK AES"** is displayed, hit **CLR** to confirm j) When **"Set HSM Port?"** is displayed, hit **CLR** to skip k) When **"Enable IPv4/IPv6?"** is displayed, hit **CLR** to skip l) When **"Set IPv4 Address?"** is displayed, hit **CLR** to skip m) When **"Set IPv4 NetMask?"** is displayed, hit **CLR** to skip n) When **"Set IPv4 Gateway?"** is displayed, hit **CLR** to skip o) When **"Set IPv6 Address?"** is displayed, hit **CLR** to skip p) When **"Set IPv6 NetMask?"** is displayed, hit **CLR** to skip q) When **"Set IPv6 Gateway?"** is displayed, hit **CLR** to skip r) When **"Change Clock?"** is displayed, hit **CLR** to skip s) When **"Import Config.?"** is displayed, hit **CLR** to skip t) When **"FIPS Mode On Disable?"** is displayed, hit **CLR** to skip u) When **"FIPS Mode On"** is displayed, hit **CLR** to confirm v) When **"Global Key Export Enabled"** is displayed, hit **CLR** to confirm **Done Rebooting Device** will be displayed. As each card is used the CA places it in the cardholder.	AD	1527

HSM3: Issuing Cripto Officer (CO), Operator (OP) and Authorization key (AAK) Cards

Step	Activity	Initials	Time
22.	CA will perform the following steps to make **Crypto Officer (CO)** cards: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"7.Role Mgmt"** hit **ENT** to confirm c) When **"Insert Card SO #?"** is displayed, insert the SO card from the cardholder d) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** e) When **"Remove Card?"** is displayed, remove card f) Repeat steps c) to e) for the 2nd SO card g) Select **"1.Issue Cards"** hit **ENT** to confirm h) Select **"1.Issue CO Cards"** hit **ENT** to confirm i) When **"Issue CO Cards?"** is displayed, hit **ENT** to confirm j) When **"Num Cards?"** is displayed, enter **"3"** and hit **ENT** to confirm k) When **"Num Req Cards?"** is displayed, enter **"2"** and hit **ENT** to confirm l) When **"Insert Card #?"** is displayed, insert the proper sequence of **CO** card from the cardholder m) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** n) When **"Remove Card?"** is displayed, remove card o) Repeat steps l) to n) for the 2nd and 3rd CO cards p) When **"CO Cards Issued"** Is displayed, hit **ENT** to confirm As each card is created the CA places it in the cardholder.	KD	1532
23.	CA will perform the following steps to make **Operator (OP)** cards: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"2.Issue OP Cards"** from the same menu **"Issue Cards"** and hit **ENT** to confirm c) When **"Issue OP Cards?"** is displayed, hit **ENT** to confirm d) When **"Num Cards?"** is displayed, enter **"3"** and hit **ENT** to confirm e) When **"Num Req Cards?"** is displayed, enter **"2"** and hit **ENT** to confirm f) When **"Insert Card #?"** is displayed, insert the proper sequence of **OP** card from the cardholder g) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** h) When **"Remove Card?"** is displayed, remove card i) Repeat steps f) to h) for the 2nd and 3rd OP cards j) When **"OP Cards Issued"** Is displayed, hit **ENT** to confirm As each card is created the CA places it in the cardholder.	KD	1534

Step	Activity	Initials	Time
24.	CA will perform the following steps to make **Authorization key (AAK)** cards: a) Hit **CLR** to return to the previous menu **"Role Mgmt"** b) Utilize the HSM's keyboard and scroll through menu using **<>** key c) Select **"3.Backup AAK"** hit **ENT** to confirm d) When **"Backup AAK?"** is displayed, hit **ENT** to confirm e) When **"Num Cards?"** is displayed, enter **"2"** and hit **ENT** to confirm f) When **"Insert Card #?"** is displayed, insert the proper sequence of **AAK** card from the cardholder g) When **"Remove Card?"** is displayed, remove card h) Repeat steps f) to g) for the 2nd AAK card i) When **"AAK Exported"** is displayed, hit **ENT** to confirm j) Hit **CLR** to return to the main menu **"Secured"** As each card is created the CA places it in the cardholder.	AD	1536

HSM3: Change and Verify API Settings

Step	Activity	Initials	Time
25.	CA will perform the following steps to change the API settings: a) Utilize the HSM's keyboard and scroll through menu using **<>** key b) Select **"5.Key Mgmt"** hit **ENT** to confirm c) When **"Insert Card CO #?"** is displayed, insert the CO card from the cardholder d) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** e) When **"Remove Card?"** is displayed, remove card f) Repeat steps c) to e) for the 2nd CO card g) Select **"5. API Settings"** hit **ENT** to confirm h) Select **"1.Key Import"** hit **ENT** to confirm i) When **"Key Import On Disable?"** is displayed, hit **ENT** to confirm j) Select **"2.Key Export"** hit **ENT** to confirm k) When **"Key Export On Disable?"** is displayed, hit **ENT** to confirm l) Select **"5.Sym Key Der"** hit **ENT** to confirm m) When **"Sym Key Der On Disable?"** is displayed, hit **ENT** to confirm n) Hit **CLR** to return to the menu **"Key Mgmt"** As each card is created the CA places it in the cardholder.	AD	1539

Step	Activity	Initials	Time

26.	CA will perform the following steps to dumps the status of the HSM:
	a) Utilize the HSM's keyboard and scroll through menu using <> key
	b) Select **"8.HSM Info"** hit **ENT** to confirm
	c) Select **"8.Output Info"** hit **ENT** to confirm
	d) When **"Output Info?"** is displayed, hit **ENT** to confirm
	e) Hit **CLR twice** to return to the main menu **"Secured"**
	
	CA switches to the ttyaudit terminal window to confirm with IW the output of the HSM configuration matches with the list below:
	
	`Modes: (1=Enabled 0=Disabled)`
	`Global Key Export 1`
	`App Key Import 0`
	`App Key Export 0`
	`Asymmetric Key Gen 1`
	`Symmetric Key Gen 1`
	`Symmetric Key Derive 0`
	`Signing 1`
	`Signature Verify 1`
	`MAC Generation 1`
	`MAC Verification 1`
	`Encrypt / Decrypt 1`
	`Delete Asym Key 1`
	`Delete Sym Key 1`
	`Output Key Details 1`
	`Output Key Summary 1`
	`Suite B Algorithms 1`
	`Non Suite B Algs 1`
	`Auto Online 0`
	`AES SMK`
	`FIPS Mode`
		AD	1542

HSM4: Power Up

Step	Activity	Initials	Time
27.	CA inspects the HSM vendor supplied TEB for tamper evidence; reads out TEB # and serial #. IW1 confirms TEB # and serial # below. **HSM: TEB# 02668318 / serial # H1411011**	AD	1543
28.	CA removes HSM from TEB; discards TEB, label the HSM with the label **HSM4** and plugs ttyUSB1 null modem serial cable to the back.	AD	1545
29.	CA removes the small packet on top of the HSM4 containing the HSM4 physical key and verify the serial # on the packet matches with the HSM4's serial #, then verify the number in the key matches with the number in the packet. **Note: The HSM physical key is used to enable/disable the LCD display and the Keypad.**	AD	1547
30.	CA places the small packet with the HSM4 physical key in a prepared TEB and seals it. reads out TEB # and shows it to participants and IW1 to confirm TEB # below. **HSM4 Physical Key: TEB# BB21907248**	AD	1548
31.	CA and IW1 initials the TEB and keeps the sealing strips for later inventory. CA then places the TEB on the equipment cart.	AD	1549
32.	CA switches to the ttyaudit terminal window, connects power to HSM4 and turns on by pressing the power switch behind it. Status information should appear on the serial logging screen and after self test the HSM4 display should say **"Important Read Manual"** indicating the HSM4 is in the initialized state. IW1 matches displayed HSM4 serial number and the application version with below. **HSM4: serial # H1411011** **Keyper Application: v2.3**	AD	1551

HSM4: Importing the AAK

Step	Activity	Initials	Time
33.	CA will perform the following steps to import the **AAK**: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"2.Restore AAK"** hit **ENT** to confirm c) When **"Restore AAK?"** is displayed, hit **ENT** to confirm d) When **"Insert Card #?"** is displayed, insert the proper sequence of AAK card from the cardholder e) When **"Remove Card?"** is displayed, remove card f) Repeat steps d) to e) for the 2nd AAK card g) When **"AAK Imported"** Is displayed, hit **ENT** to confirm As each card is used the CA places it in the cardholder.	AD	1552

HSM4: Switching to Secure State

Step	Activity	Initials	Time
34.	CA will perform the following steps to set the HSM4 Secure State using **Security Officer (SO)** cards: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"3.Secure"** hit **ENT** to confirm c) When **"Secure?"** is displayed, hit **ENT** to confirm d) When **"Insert Card SO #?"** is displayed, insert the SO from the cardholder e) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** f) When **"Remove Card?"** is displayed, remove card g) Repeat steps d) to f) for the 2nd SO card h) When **"SMK AES Triple DES?"** is displayed, hit **CLR** to skip i) When **"SMK AES"** is displayed, hit **CLR** to confirm j) When **"Set HSM Port?"** is displayed, hit **CLR** to skip k) When **"Enable IPv4/IPv6?"** is displayed, hit **CLR** to skip l) When **"Set IPv4 Address?"** is displayed, hit **CLR** to skip m) When **"Set IPv4 NetMask?"** is displayed, hit **CLR** to skip n) When **"Set IPv4 Gateway?"** is displayed, hit **CLR** to skip o) When **"Set IPv6 Address?"** is displayed, hit **CLR** to skip p) When **"Set IPv6 NetMask?"** is displayed, hit **CLR** to skip q) When **"Set IPv6 Gateway?"** is displayed, hit **CLR** to skip r) When **"Change Clock?"** is displayed, hit **CLR** to skip s) When **"Import Config.?"** is displayed, hit **CLR** to skip t) When **"FIPS Mode On Disable?"** is displayed, hit **CLR** to skip u) When **"FIPS Mode On"** is displayed, hit **CLR** to confirm v) When **"Global Key Export Enabled"** is displayed, hit **CLR** to confirm **Done Rebooting Device** will be displayed. As each card is used the CA places it in the cardholder.	AD	15 55

HSM4: Change and Verify API Settings

Step	Activity	Initials	Time
35.	CA will perform the following steps to change the API settings: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"5.Key Mgmt"** hit **ENT** to confirm c) When **"Insert Card CO #?"** is displayed, insert the CO card from the cardholder d) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** e) When **"Remove Card?"** is displayed, remove card f) Repeat steps c) to e) for the 2nd CO card g) Select **"5. API Settings"** hit **ENT** to confirm h) Select **"1.Key Import"** hit **ENT** to confirm i) When **"Key Import On Disable?"** is displayed, hit **ENT** to confirm j) Select **"2.Key Export"** hit **ENT** to confirm k) When **"Key Export On Disable?"** is displayed, hit **ENT** to confirm l) Select **"5.Sym Key Der"** hit **ENT** to confirm m) When **"Sym Key Der On Disable?"** is displayed, hit **ENT** to confirm n) Hit **CLR** to return to the menu **"Key Mgmt"** As each card is created the CA places it in the cardholder.	AD	1557

Step	Activity	Initials	Time

36.	CA will perform the following steps to dumps the status of the HSM:
	a) Utilize the HSM's keyboard and scroll through menu using <> key
	b) Select **"8.HSM Info"** hit **ENT** to confirm
	c) Select **"8.Output Info"** hit **ENT** to confirm
	d) When **"Output Info?"** is displayed, hit **ENT** to confirm
	e) Hit **CLR** to return to the menu **"Key Mgmt"**
	
	CA switches to the ttyaudit terminal window to confirm with IW the output of the HSM configuration matches with the list below:
	
	`Modes: (1=Enabled 0=Disabled)`
	`Global Key Export 1`
	`App Key Import 0`
	`App Key Export 0`
	`Asymmetric Key Gen 1`
	`Symmetric Key Gen 1`
	`Symmetric Key Derive 0`
	`Signing 1`
	`Signature Verify 1`
	`MAC Generation 1`
	`MAC Verification 1`
	`Encrypt / Decrypt 1`
	`Delete Asym Key 1`
	`Delete Sym Key 1`
	`Output Key Details 1`
	`Output Key Summary 1`
	`Suite B Algorithms 1`
	`Non Suite B Algs 1`
	`Auto Online 0`
	`AES SMK`
	`FIPS Mode`		

HSM4: Generate and Backup Storage Master Key (SMK)

Step	Activity	Initials	Time
37.	CA will perform the following steps to generate **Storage Master Key (SMK)**: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"4.SMK"** from the same menu **"Key Mgmt"** and hit **ENT** to confirm c) Select **"1.Generate SMK"** hit **ENT** to confirm d) When **"Generate SMK?"** is displayed, hit **ENT** to confirm e) When **"SMK Generated"** is displayed, hit **ENT** to confirm	AD	1601
38.	CA will perform the following steps to make **Storage Master Key (SMK)** cards: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"2.Backup SMK"** from the same menu **"SMK"** and hit **ENT** to confirm c) When **"Backup SMK?"** is displayed, hit **ENT** to confirm d) When **"Num Cards?"** is displayed, enter **"4"** and hit **ENT** to confirm e) When **"Num Req Cards?"** is displayed, enter **"2"** and hit **ENT** to confirm f) When **"Insert Card #?"** is displayed, insert the proper sequence of SMK card from the cardholder g) When **"Remove Card?"** is displayed, remove card h) Repeat steps f) to g) for the 2nd, 3rd and 4th SMK cards i) When **"Verify Card #?"** is displayed, insert the proper sequence of SMK card from the cardholder j) When **"Remove Card?"** is displayed, remove card k) Repeat steps i) to j) for the 2nd, 3rd and 4th SMK cards l) When **"SMK Backed Up"** Is displayed, hit **ENT** to confirm As each card is created the CA places it in the cardholder.	AD	1605

HSM4: Enable/Activate

Step	Activity	Initials	Time
39.	CA will perform the following steps to activate the **HSM4**: a) Hit **CLR twice** to return to the main menu **"Secured"** b) Utilize the HSM's keyboard and scroll through menu using <> key c) Select **"1.Set Online"** hit **ENT** to confirm d) When **"Set Online?"** is displayed, hit **ENT** to confirm e) When **"Insert Card OP #?"** is displayed, insert the OP card from the cardholder f) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** g) When **"Remove Card?"** is displayed, remove card h) Repeat steps e) to g) for the 2nd OP card 1 of 3 2 of 3 As each card is used the CA places it in the cardholder. Confirm the **"READY"** led on the **HSM4** is **ON.**	AD	1607

HSM4: Check Network Connectivity between Laptop and HSM4

Step	Activity	Initials	Time
40.	CA connects HSM4 to laptop using Ethernet cable in **LAN** port.	AD	1608
41.	CA tests network connectivity between laptop and HSM by entering `ping 192.168.0.2` on the laptop terminal window and looking for responses. Ctrl-C to exit program.	AD	1609

HSM4: Initialize

Step	Activity	Initials	Time

42.	On the laptop terminal window, CA executes:
	`. /opt/dnssec/fixenv`
	to set environment variables for HSM then runs
	`inittoken`
	for the slot number enter:
	`0`
	for the PKCS11 Token name enter:
	`ICANNTEST`
	for the User PIN enter and re-enter:
	`123456`
	for Security Officer PIN enter and re-enter:
	`123456`
	this should return
	`Token initialized OK`
		AD	1610

HSM4: Generate New Test Key

Step	Activity	Initials	Time
43.	On the laptop terminal window, CA executes: **kskgen** to generate new test KSK inside the HSM and Certificate Signing Request (CSR). When **"Activate HSM prior to accepting in the affirmative! (y/n)"** is displayed, confirm the hardware security module's **"READY"** LED is on and type "y" and press enter. ~~If "slot" is asked type 0.~~ Sample output should look like Figure 2.	AD	1612

```
Starting: kskgen (at Sat Feb 14 00:40:14 2015 UTC)
Use HSM /opt/dnssec/aep.hsmconfig?
HSM /opt/dnssec/aep.hsmconfig activated.
 setenv KEYPER_LIBRARY_PATH=/opt/dnssec
 setenv PKCS11_LIBRARY_PATH=/opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07
Found 1 slots on HSM /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07
HSM slot 0 included
Loaded /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07 Slot=0
HSM Information:
    Label:           ICANNTEST
    ManufacturerID:  AEP Networks
    Model:           Keyper 9860-2
    Serial:          H1404001

Generating 2048 bit RSA keypair...
Created keypair labeled "Kktpjs4"

SHA256 DS resource record and hash:
. IN DS 32579 8 2 A6F2B99E0E9193A9258701E0EB139E559A957587B9685FF1BEF9CCC334E15445
>> rematch vagabond sentence onlooker apple miracle playhouse passenger bombast liberty absurd tobacco
trouble barbecue quiver equipment pupil Montana indulge liberty sentence gravity eyetooth vacancy
skydive Waterloo spigot replica choking tolerance eating detector <<

Created CSR file "Kktpjs4.csr":
O: ICANN
OU: IANA
CN: Root Zone KSK 2015-02-14T00:40:22+00:00
1.3.6.1.4.1.1000.53: . IN DS 32579 8 2
A6F2B99E0E9193A9258701E0EB139E559A957587B9685FF1BEF9CCC334E15445

Kktpjs4.csr SHA256 thumbprint and hash:
DBB4890B093189A285A0F6C54340D728DF12FA17A5E5F9F89F62B09499DDCFAB
>> suspense politeness nightbird armistice Algol company nightbird Pacific music Orlando village
resistor crucial Dakota stopwatch cellulose talon backwater wallet bookseller reindeer travesty waffle
warranty quota gadgetry ruffled molecule prowler tambourine stagehand Pegasus <<

Unloaded /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07 Slot=0
```

Figure 2

Acceptance Testing ONLY

```
Starting: kskgen (at Thu Mar 19 16:11:33 2015 UTC)
Use HSM /opt/dnssec/aep.hsmconfig?
HSM /opt/dnssec/aep.hsmconfig activated.
setenv KEYPER_LIBRARY_PATH=/opt/dnssec
setenv PKCS11_LIBRARY_PATH=/opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07
Found 1 slots on HSM /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07
HSM slot 0 included
Loaded /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07 Slot=0
HSM Information:
    Label:           ICANNTEST
    ManufacturerID:  AEP Networks
    Model:           Keyper 9860-2
    Serial:          H1411011

Generating 2048 bit RSA keypair...
Created keypair labeled "Kkufpkt"

SHA256 DS resource record and hash:
. IN DS 6679 8 2 D30359EA3C101BCD89819DDC42FE937AA0DA9F71CE0C0E31F7729A5A1FB936E9
>> stapler aggregate endow undaunted cobra autopsy beeswax sandalwood nightbird inventi
ve quadrant sympathy crowfoot yesteryear playhouse infancy ragtime surrender quota hide
away spyglass article apple company virus holiness pupil existence billiard proximate C
hristmas ultimate <<

Created CSR file "Kkufpkt.csr":
O: ICANN
OU: IANA
CN: Root Zone KSK 2015-03-19T16:12:02+00:00
1.3.6.1.4.1.1000.53: . IN DS 6679 8 2 D30359EA3C101BCD89819DDC42FE937AA0DA9F71CE0C0E31F
7729A5A1FB936E9

Kkufpkt.csr SHA256 thumbprint and hash:
1A8C5554A5760F4FE959AE073DFCE6098402FF2E6B41D4A1F7F614755BB9E274
>> beehive megaton edict equation reindeer impetus artist document treadmill examine ro
bust amusement commence Wilmington tracker applicant mural aftermath Zulu coherence gli
tter decadence steamship outfielder virus vocalist baboon impartial erase proximate tig
er hydraulic <<

Unloaded /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07 Slot=0
```

TEST ONLY?

HSM4: Print Thumbprint

Step	Activity	Initials	Time
44.	CA prints out hard copy of the log output file of kskgen by executing `printlog kskgen-20150319-*.log 2` for attachment to IW1 and CA scripts.	AD	1613

HSM4: Record Test Keypair Label

Step	Activity	Initials	Time
45.	IW1 records the keypair label here Kkutpkt	AD	1613

HSM4: Verify CSR

Step	Activity	Initials	Time
46.	CA checks the integrity of the CSR by executing in to the terminal windows: `displaycsr XXXX.csr` Where XXXX would be replaced with the keypar label generated above. Hit SPACE bar until end of display and then "q". Sample output should look like Figure 3.	AD	1615

```
Certificate Request:
    Data:
        Version: 0 (0x0)
        Subject: O=ICANN, OU=IANA, CN=Root Zone KSK 2015-02-14T00:40:22+00:00/1.3.6.1.4.1.1000.53=. IN
DS 32579 8 2 A6F2B99E0E9193A9258701E0EB139E559A957587B9685FF1BEF9CCC334E15445
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
            RSA Public Key: (2048 bit)
                Modulus (2048 bit):
                    00:d4:68:77:51:16:b9:d0:fa:21:25:38:b8:12:91:
                    [...]
                    f0:95
                Exponent: 65537 (0x10001)
        Attributes:
            a0:00
    Signature Algorithm: sha256WithRSAEncryption
        60:aa:a9:03:5e:36:b1:df:6f:ca:c9:42:49:70:7b:69:2f:59:
        [...]
        81:ae:ee:95
```

Figure 3

HSM4: Backup Test Key

Step	Activity	Initials	Time
47.	CA presses **RESTART** button on **HSM4** to take OFFLINE and waits for SELT TEST to complete. Confirm the **"READY"** led on the **HSM4** is **OFF**.	AD	1615
48.	CA will perform the following steps to make **Application Key (APP. Key)** card: a) Utilize the HSM's keyboard and scroll through menu using **<>** key b) Select **"5.Key Mgmt"** hit **ENT** to confirm c) When **"Insert Card CO #?"** is displayed, insert the CO card from the cardholder d) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** e) When **"Remove Card?"** is displayed, remove card f) Repeat steps c) to e) for the 2nd CO card g) Select **"3.App Keys"** hit **ENT** to confirm h) Select **"1.Backup"** hit **ENT** to confirm i) When **"Backup?"** is displayed, hit **ENT** to confirm j) When **"Which Media?"** is displayed, select **"2.Backup to Card"** and hit **ENT** to confirm k) Select **"2.Specify key"** hit **ENT** to confirm l) Hit **"A"** to select the key generate above and hit **ENT** to confirm m) When **"Insert B/U Card?"** is displayed insert the proper AAP. Key card from the cardholder n) When **"Remove Card?"** is displayed, remove card o) When **"Backup Success"** is displayed, hit **ENT** to confirm p) Hit **CLR twice** to return to the main menu **"Secured"** 3 of 3 2 of 3 As card is created the CA places it in the cardholder.	AD	1619
49.	CA disconnects Ethernet cable from back of HSM4.	AD	1619

HSM3: Importing the SMK and APP. Key

Step	Activity	Initials	Time
50.	CA will perform the following steps to import the **Storage Master Key (SMK)** cards in to the **HSM3**: a) Utilize the HSM's keyboard and scroll through menu using <> key b) Select **"5.Key Mgmt"** hit **ENT** to confirm c) When **"Insert Card CO #?"** is displayed, insert the CO card from the cardholder d) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** e) When **"Remove Card?"** is displayed, remove card f) Repeat steps c) to e) for the 2nd CO card g) Select **"4.SMK"** hit **ENT** to confirm h) Select **"3.Restore SMK"** hit **ENT** to confirm i) When **"Restore SMK?"** is displayed, hit **ENT** to confirm j) When **"Insert Card SMK #?"** is displayed, insert the SMK card from the cardholder k) When **"Remove Card?"** is displayed, remove card l) Repeat steps j) to k) for the 2nd SMK card m) When **"SMK Restored"** Is displayed, hit **ENT** to confirm As each card is used the CA places it in the cardholder.	AD	1623
51.	CA will perform the following steps to import the **Application Key (APP. Key)** cards: a) Hit **CLR** to return to the previous menu **"Key Mgmt"** b) Utilize the HSM's keyboard and scroll through menu using <> key c) Select **"3.App Keys"** hit **ENT** to confirm d) Select **"2.Restore"** hit **ENT** to confirm e) When **"Restore?"** is displayed, hit **ENT** to confirm f) When **"Which Media?"** is displayed, select **"2. From Card"** and hit **ENT** to confirm g) When **"Insert Card #?"** is displayed, insert the proper card from the cardholder h) When **"Remove Card?"** is displayed, remove card i) When **"Restore Complete"** is displayed, hit **ENT** to confirm As card is used the CA places it in the cardholder.	AD	1624

HSM3: Enable/Activate

Step	Activity	Initials	Time
52.	CA will perform the following steps to activate the **HSM3**: a) Hit **CLR twice** to return to the main menu **"Secured"** b) Utilize the HSM's keyboard and scroll through menu using <> key c) Select **"1.Set Online"** hit **ENT** to confirm d) When **"Set Online?"** is displayed, hit **ENT** to confirm e) When **"Insert Card OP #?"** is displayed, insert the OP card from the cardholder f) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** g) When **"Remove Card?"** is displayed, remove card h) Repeat steps e) to g) for the 2nd OP card As each card is used the CA places it in the cardholder. Confirm the **"READY"** led on the **HSM3** is **ON.**	AD	1625

HSM3: Check Network Connectivity between Laptop and HSM3

Step	Activity	Initials	Time
53.	CA connects HSM3 to laptop using Ethernet cable in **LAN** port.	AD	1626
54.	CA tests network connectivity between laptop and HSM by entering `ping 192.168.0.2` on the laptop terminal window and looking for responses. Ctrl-C to exit program.	AD	1626

HSM3: Verify the Test Key

Step	Activity	Initials	Time
55.	CA checks the Test Key by executing in to the terminal windows: `keybackup -l -P 123456` and confirms the Testing Key Label generated in the step 45.	AD	1627

HSM3: Re-Initialize Erase All / Zeroize / Unsecure

Step	Activity	Initials	Time
56.	CA disconnects Ethernet cable from back of HSM3.	AD	1628
57.	CA presses **RESTART** button on **HSM3** to take OFFLINE and waits for SELT TEST to complete. Confirm the **"READY"** led on the **HSM3** is **OFF**.	AD	1628
58.	CA switches to the ttyaudit terminal window to display the output of the HSM3.	AD	1629
59.	CA will perform the following steps to return the **HSM3** to **"Unsecure"** state as if just shipped form vendor. This will erase all keys (AAK, SMK, AAP), settings and configuration. a) Utilize the HSM's keyboard and scroll through menu using **<>** key b) Select **"6.HSM Mgmt"** hit **ENT** to confirm c) When **"Insert Card SO #?"** is displayed, insert the SO card from the cardholder d) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** e) When **"Remove Card?"** is displayed, remove card f) Repeat steps c) to e) for the 2nd SO card g) Select **"5.Unsecure"** hit **ENT** to confirm h) When **"Unsecure?"** is displayed, hit **ENT** to confirm i) When **"Done"** is displayed, hit **ENT** to confirm It may take a few minutes for HSM to restart after erasing all keys. When this operation is complete the HSM3 will reboot into the **'Unsecured State'** and after self test the HSM3 display should say **"Important Read Manual"** indicating the HSM3 is in the initialized state. Note: Material on the cards becomes useless once the HSMs are returned to an initialized state.	AD	1631
60.	CA turns off the HSM3 by pressing the power switch behind it.	AD	1632

HSM4: Re-Initialize Erase All / Zeroize / Unsecure

Step	Activity	Initials	Time
61.	CA confirms the **READY** led on the HSM4 is **OFF**.	AD	1632
62.	CA will perform the following steps to return the **HSM4** to **"Unsecure"** state as if just shipped form vendor. This will erase all keys (AAK, SMK, AAP), settings and configuration. a) Utilize the HSM's keyboard and scroll through menu using **<>** key b) Select **"6.HSM Mgmt"** hit **ENT** to confirm c) When **"Insert Card SO #?"** is displayed, insert the SO card from the cardholder d) When **"PIN?"** is displayed, enter **"11223344"** and hit **ENT** e) When **"Remove Card?"** is displayed, remove card f) Repeat steps c) to e) for the 2nd SO card g) Select **"5.Unsecure"** hit **ENT** to confirm h) When **"Unsecure?"** is displayed, hit **ENT** to confirm i) When **"Done"** is displayed, hit **ENT** to confirm It may take a few minutes for HSM to restart after erasing all keys. When this operation is complete the HSM4 will reboot into the **'Unsecured State'** and after self test the HSM4 display should say **"Important Read Manual"** indicating the HSM4 is in the initialized state. Note: Material on the cards becomes useless once the HSMs are returned to an initialized state.	AD	1634
63.	CA turns off the HSM4 by pressing the power switch behind it.	AD	1634

Act. 3 Secure Hardware and Close the Ceremony

Return HSMs to a TEB

Step	Activity	Initials	Time
1.	CA disconnects each HSMs from power and laptop (serials and Ethernet) if connected.	AD	1635
2.	CA places HSM3 into a prepared TEB and seals it.	AD	1637
3.	CA reads out TEB # and HSM serial #, shows item to participants and IW1 confirms TEB # and HSM serial # below. **HSM3: TEB# BB24646612 / serial # H1403032** IW1 and CA initials the TEB and keep the sealing strips for later inventory. CA places item on equipment cart.	AD	1639
4.	CA places HSM4 into a prepared TEB and seals it.	AD	1640
5.	CA reads out TEB # and HSM serial #, shows item to participants and IW1 confirms TEB # and HSM serial # below. **HSM4: TEB# BB 24646680 / serial # H1411011** IW1 and CA initials the TEB and keep the sealing strips for later inventory. CA places item on equipment cart.	AD	1641

Stop Recording Serial Port Activity and Logging Terminal Output

Step	Activity	Initials	Time
6.	**Closing ttyaudit terminal window** CA terminates the HSMs serial output capture by disconnecting the USBs serial adaptors from laptop. CA then exits out of **ttyaudit terminal window** by typing "exit".	AD	1642
7.	**Terminating the logging script** CA stops logging terminal output by entering "exit" in the other terminal window. This only stops the script logging and will **NOT** close window.	AD	1642

Backup HSMFD Contents

Step	Activity	Initials	Time
8.	Set dotglob by executing `shopt -s dotglob` This allows copying everything in the original HSMFD.	AD	1643
9.	Calculate the sha256hash of the contents on the original HSMFD. `find -P /media/HSMFD -type f -print0 | sort -z | xargs -0 cat | sha256sum`	AD	1644
10.	Copy and paste the sha256hash and paste it on Text Editor by going to **Applications > Accessories > Text Editor**	AD	1644
11.	Print two copies. One for the audit bundle and the other for the HSMFD package.	AD	1645
12.	CA displays contents of HSMFD by executing `ls -ltr`	AD	1646
13.	CA plugs a blank FD labeled HSMFD into the laptop, then waits for it to be recognized by the O/S (as HSMFD_); and copies the contents of the HSMFD to the blank drive for backup by executing `cp -Rp * /media/HSMFD_`	AD	1647
14.	CA displays contents of HSMFD_ by executing `ls -ltr /media/HSMFD_`	AD	1647
15.	Calculate the sha256hash of the contents on the copied HSMFD. `find -P /media/HSMFD_ -type f -print0 | sort -z | xargs -0 cat | sha256sum` Confirm that it matches the sha256hash of the original HSMFD	AD	1648
16.	CA unmounts new FD using `umount /media/HSMFD_`	AD	1648
17.	CA removes **HSMFD_** and places on table.	AD	1649
18.	CA repeats step 13 to 17 for the 2nd copy	AD	1650
19.	CA repeats step 13 to 17 for the 3rd copy		

Print Logging Information

Step	Activity	Initials	Time

20.	CA prints out hard copies of logging information by executing
	`enscript -2Gr -# 2 script-20150319.log`
	`enscript -Gr -# 2 --font="Courier8" ttyaudit-ttyUSB*-20150319-*.log`
	for attachment to IW1 and CA scripts.
	Note: Ignore the error regarding non-printable characters if prompted.
		AD	1658

ICANN DNSSEC Script Exception

Abbreviations

TEB = Tamper Evident Bag
HSM = Hardware Security Module
FD = Flash Drive
CA = Ceremony Administrator
IW = Internal Witness
SA = System Administrator
SSC = Safe Security Controller

Instructions: Initial each step that has been completed below. Note time.

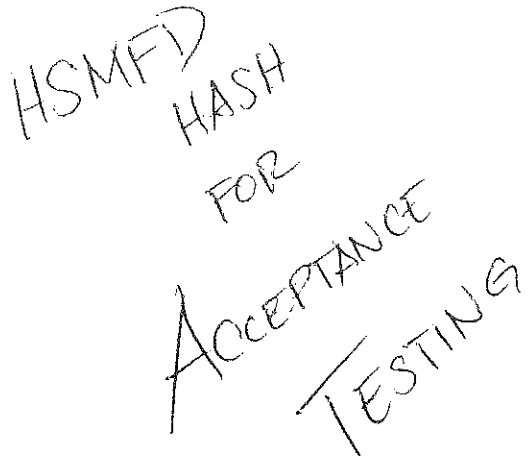
Note Exception Time

Step	Activity	Initials	Time
1.	IW1 notes date and time of key ceremony exception and signs here: 19/03/2015	AD	1650
2.	IW1 Describes exception and action below.		

- Step 19 not needed. Ample copy of HSMFD

– End of DNSSEC Script Exception –

02c8a96d31c12c017d765e73a6e54b4d30326a865885f8d40eb2de3ba0a9faef



EAST Acceptance Testing

```
Script started on Thu 19 Mar 2015 03:04:37 PM UTC
\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# ping 192.168.0.2\033[K0.2
PING 192.168.0.2 (192.168.0.2) 56(84) bytes of data.
64 bytes from 192.168.0.2: icmp_seq=1 ttl=255 time=1.59 ms
64 bytes from 192.168.0.2: icmp_seq=2 ttl=255 time=0.366 ms
64 bytes from 192.168.0.2: icmp_seq=3 ttl=255 time=0.523 ms

--- 192.168.0.2 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 1999ms
rtt min/avg/max/mdev = 0.366/0.829/1.598/0.547 ms
\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# . /opt/dnssec/fixenv
\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# inittoken



****************************************
InitToken for Linux v4.07 P4=58402
****************************************
Built on Fri_Nov_20_11:01:10_GMT_2009
Copyright (c) AEP Networks Ltd 2008
****************************************
WARNING: inittoken will erase any keys currently mapped
Enter Ctrl and C to abort if this is not desired
****************************************

Loading /usr/local/lib/pkcs11.so...
Failed so trying /usr/local/lib/pkcs11.GCC4.0.2.so.4.07...
Failed so trying /opt/Keyper/PKCS11Provider/pkcs11.so...
Failed so trying /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07...
Shared library loaded

PKCS11 API v:2.11
Manufacturer ID:AEP Networks. Release32 P4=58402
The slots that are available are between 0 and 0

Enter the slot number to initialise :0

Enter the PKCS11 Token Name :ICANNTEST

Enter the PKCS11 User PIN, it must be between 4 and 32 digits :
Re-enter the PKCS11 User PIN :
Enter the PKCS11 Security Officer PIN, it must be between 4 and 32 digits :
Re-enter the PKCS11 Security Officer PIN :

PKCS11 Slot     : 0
PKCS11 Label    : ICANNTEST
Keyper Model    : Keyper 9860-2
Keyper Serial   : H1411011
Keyper version  : 2.3
App             : 023
ABL             : 011
AL              : 00
----------------------------------------------
Token initialised OK
****************************************


\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# kskgen
Starting: kskgen (at Thu Mar 19 16:11:33 2015 UTC)
Use HSM /opt/dnssec/aep.hsmconfig?
Activate HSM prior to accepting in the affirmative!! (y/N): y
HSM /opt/dnssec/aep.hsmconfig activated.
[debug] setenv KEYPER_LIBRARY_PATH=/opt/dnssec
[debug] setenv PKCS11_LIBRARY_PATH=/opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07
Found 1 slots on HSM /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07
HSM slot 0 included
Loaded /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07 Slot=0
HSM Information:
    Label:           ICANNTEST
    ManufacturerID:  AEP Networks
    Model:           Keyper 9860-2
    Serial:          H1411011

Generating 2048 bit RSA keypair...
Created keypair labeled "Kkufpkt"

SHA256 DS resource record and hash:
. IN DS 6679 8 2 D30359EA3C101BCD89819DDC42FE937AA0DA9F71CE0C0E31F7729A5A1FB936E9
>> stapler aggregate endow undaunted cobra autopsy beeswax sandalwood nightbird invent
ive quadrant sympathy crowfoot yesteryear playhouse infancy ragtime surrender quota hi
deaway spyglass article apple company virus holiness pupil existence billiard proximat
e Christmas ultimate <<

Created CSR file "Kkufpkt.csr":
O: ICANN
OU: IANA
CN: Root Zone KSK 2015-03-19T16:12:02+00:00
1.3.6.1.4.1.1000.53: . IN DS 6679 8 2 D30359EA3C101BCD89819DDC42FE937AA0DA9F71CE0C0E31
F7729A5A1FB936E9

Kkufpkt.csr SHA256 thumbprint and hash:
1A8C5554A5760F4FE959AE073DFCE6098402FF2E6B41D4A1F7F614755BB9E274
>> beehive megaton edict equation reindeer impetus artist document treadmill examine r
obust amusement commence Wilmington tracker applicant mural aftermath Zulu coherence g
litter decadence steamship outfielder virus vocalist baboon impartial erase proximate
tiger hydraulic <<

Unloaded /opt/Keyper/PKCS11Provider/pkcs11.GCC4.0.2.so.4.07 Slot=0

********** Log output in ./kskgen-20150319-161133.log **********
\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# printlog kskgen-20150319
-*.log 2
[ 1 pages * 2 copy ] sent to printer
3 lines were wrapped
\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# displaycsr K033[KKkufpkt
.csr
Certificate Request\033=
    Data:
        Version: 0 (0x0)
        Subject: O=ICANN, OU=IANA, CN=Root Zone KSK 2015-03-19T16:12:02+00:00/1.3.6.1.
4.1.1000.53=. IN DS 6679 8 2 D30359EA3C101BCD89819DDC42FE937AA0DA9F71CE0C0E31F7729A5A1
FB936E9
        Subject Public Key Info:
            Public Key Algorithm: rsaEncryption
            RSA Public Key: (2048 bit)
                Modulus (2048 bit):
                    00:fa:1b:1f:42:d6:4a:82:78:c2:62:0c:9e:b0:5f:
                    95:cb:96:e2:70:15:b9:d9:ef:19:d5:da:51:a1:f0:
                    5e:03:6d:87:cc:b0:fa:82:35:cc:1c:bd:03:77:27:
                    d7:a5:37:b8:ee:a8:9f:5b:fd:cc:05:5b:5c:c3:8a:
                    2f:41:19:d7:83:19:11:2d:bd:57:3e:64:4c:ea:68:
                    82:84:84:2f:eb:0a:99:de:10:3a:0a:40:0e:94:00:
                    3d:a1:be:ec:b1:c4:6d:f6:2c:84:e3:a3:9a:1a:c8:
```

EAST ACCEPTANCE TESTING

```
                    9e:a1:44:1d:c5:69:7a:20:ff:66:87:8c:14:f0:0e:
                    3c:ad:85:c4:20:45:ff:00:13:98:97:97:94:dc:d1:
                    d8:7a:0a:f8:62:e6:61:f4:62:70:a5:2c:c0:f2:ec:
                    c5:c3:16:08:b9:84:da:98:24:59:c4:b2:4d:7f:60:
                    48:c6:71:9a:17:b1:a8:04:98:bc:de:96:53:64:b0:
                    15:31:ba:0d:43:7c:6f:51:06:53:d4:97:2e:06:01:
                    b9:91:01:0f:d5:6c:2a:2d:f8:e5:3d:00:e5:51:53:
                    f9:df:92:15:be:54:81:50:7b:24:cb:a2:1f:9c:0a:
                    42:99:03:ed:b7:77:21:c7:e1:4d:12:55:54:24:3b:
                    de:7a:53:e6:44:37:98:03:3d:4d:31:73:69:7c:44:
                    3f:69
                Exponent: 65537 (0x10001)
        Attributes:
\033[K          a0:00
    Signature Algorithm: sha256WithRSAEncryption
        a2:6a:4b:2c:ed:d6:bc:1d:2a:79:02:e3:4e:74:9d:a8:d8:4b:
        93:87:6c:8b:f0:cf:04:57:fc:df:49:97:9b:72:b7:a8:21:42:
        e5:67:16:b9:2c:1b:1b:9c:a2:18:60:e1:a9:09:a7:50:8b:55:
        6a:c8:db:b8:8a:fc:55:bc:5d:f3:a6:b4:ba:be:a2:b9:c9:bd:
        25:eb:d4:7d:6a:d2:a3:80:d7:23:b3:d3:c7:e3:f4:37:9a:2e:
        3f:8e:0d:09:e1:c0:04:ea:e9:2e:fc:7b:ae:25:02:29:24:82:
        74:75:1a:77:54:08:6e:31:d2:89:08:5e:bd:8f:50:36:6a:4c:
        42:84:40:f5:d2:cf:bf:93:40:f6:20:80:07:db:18:cc:fe:ee:
        18:83:8f:e6:23:60:6f:55:48:c6:a6:26:08:3e:ff:de:4d:7c:
        b6:3b:d3:cf:f5:76:2b:1c:fb:34:ed:1d:3c:be:c9:25:8e:dc:
        85:1d:7b:70:5b:92:7e:07:78:be:8b:53:e3:fa:c4:30:82:d7:
        04:53:b1:b5:c2:aa:39:0d:56:cb:24:8e:5a:71:3f:ef:f9:13:
        53:fc:da:be:dc:c9:03:03:89:d2:63:da:0e:e5:5f:03:9a:0c:
        f7:ec:be:ea:47:10:e3:15:67:5d:f3:41:4e:d6:86:18:b0:a3:
        42:66:6f:dd
\033[Km\033[?1l\033>\033[?1049l\033]0;root@localhost:/media/HSMFD\007[root@localhost HS
MFD]# ping 192.168.0.2
PING 192.168.0.2 (192.168.0.2) 56(84) bytes of data.
64 bytes from 192.168.0.2: icmp_seq=1 ttl=255 time=1.72 ms
64 bytes from 192.168.0.2: icmp_seq=2 ttl=255 time=0.366 ms
64 bytes from 192.168.0.2: icmp_seq=3 ttl=255 time=0.524 ms
64 bytes from 192.168.0.2: icmp_seq=4 ttl=255 time=0.365 ms

--- 192.168.0.2 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3000ms
rtt min/avg/max/mdev = 0.365/0.744/1.721/0.567 ms
\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# keybackup -l -P 123456
Starting: keybackup -l -P 123456 (at Thu Mar 19 16:27:26 2015 UTC)
1 public keys:
label:Kkufpkt
1 private keys:
label:Kkufpkt

********** Log output in ./keybackup-20150319-162726.log **********
\033]0;root@localhost:/media/HSMFD\007[root@localhost HSMFD]# exit
exit

Script done on Thu 19 Mar 2015 04:42:49 PM UTC
```

```
2015-03-19T15:19:16+0000        ttyUSB0 þþþþþþþþÿþþþþþþþþþÿÿÿ
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 H1403032 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 BBL CRC32: 0x757574CA
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 Running applicationBootLoader at 0xEFDC0000
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 H1403032 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 ABL CRC32: 0xE7E0FA6A
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 ####################################
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 ###     ABL tamper records       ###
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 ####################################
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 Current Tamper Counts (decimal 0-255):
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 ====================================
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 vextoosTamperCount:     0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 vintoosTamperCount:     42
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 vbboosTamperCount:      0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 maxstrtempTamperCount:  0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 minstrtempTamperCount:  0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 meshTamperCount:        0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 extampSMKTamperCount:   0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 extampIMKTamperCount:   0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 tempdiffTamperCount:    0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 pfTamperCount:          42
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 restartTamperCount:     132
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 Current tamper bitmaps:
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 ========================
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 currentTamper bitmap:   0x0000 0b .... .... .... ....
```

```
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 lastTamper bitmap:      0x0080 0b .... .... 1... ....  |EXT_POWER_DOWN
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 Bitmapped Change Record (most recent first):
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0 ==========================================
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:16+0000        ttyUSB0
2015-03-19T15:19:17+0000        ttyUSB0 Running cryptoApplication at 0xEBF00000
2015-03-19T15:19:17+0000        ttyUSB0
2015-03-19T15:19:17+0000        ttyUSB0 Jumping to startup @ 0x001037B4
2015-03-19T15:19:17+0000        ttyUSB0
2015-03-19T15:19:17+0000        ttyUSB0 Board is P2020RDB
2015-03-19T15:19:17+0000        ttyUSB0
2015-03-19T15:19:17+0000        ttyUSB0 board_smp_init: 2 cpu
2015-03-19T15:19:17+0000        ttyUSB0
2015-03-19T15:19:17+0000        ttyUSB0
2015-03-19T15:19:17+0000        ttyUSB0
2015-03-19T15:19:17+0000        ttyUSB0 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T15:19:17+0000        ttyUSB0
2015-03-19T15:19:18+0000        ttyUSB0
2015-03-19T15:19:18+0000        ttyUSB0
2015-03-19T15:19:18+0000        ttyUSB0 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T15:19:18+0000        ttyUSB0
2015-03-19T15:19:18+0000        ttyUSB0 Starting next program at v0015183c
2015-03-19T15:19:18+0000        ttyUSB0
2015-03-19T15:19:18+0000        ttyUSB0 Starting K-Series Kernel
2015-03-19T15:19:18+0000        ttyUSB0
2015-03-19T15:19:18+0000        ttyUSB0 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T15:19:18+0000        ttyUSB0
2015-03-19T15:19:18+0000        ttyUSB0 Thu Mar 19 15:14:22 2015
2015-03-19T15:19:18+0000        ttyUSB0
2015-03-19T15:19:19+0000        ttyUSB0 Starting auditd v2.0 ... started.
2015-03-19T15:19:19+0000        ttyUSB0
2015-03-19T15:19:19+0000        ttyUSB0 Interface 0 configured for IPv6.
2015-03-19T15:19:19+0000        ttyUSB0
2015-03-19T15:19:19+0000        ttyUSB0 Interface 0 configured for IPv4.
2015-03-19T15:19:19+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T15:19:20+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0 add net default: gateway ::: Network is unreachable
2015-03-19T15:19:20+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T15:19:20+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T15:19:20+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0 Starting USB driver...
2015-03-19T15:19:20+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T15:19:20+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0
2015-03-19T15:19:20+0000        ttyUSB0
```

```
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running DES POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 DES POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running Triple DES POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Triple DES POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running AES POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 AES POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running SHA1 POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 SHA1 POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running SHA2 POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 SHA2 POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running RandomGen POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 RandomGen POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running RSA POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 RSA POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running DSA POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 DSA POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Running ECC POST Test
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 ECC POST Test Passed
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0 Audit on 19/3/2015 15:14:25 00100008
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:22+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 Keyper 9860-2  Serial Number H1403032
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 Memory Usage:
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 RAM (free/total)        197Mb/256Mb
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 Flash (free/total)      127Mb/128Mb
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0    black store          44b
```

```
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0    statistics           112b
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0    other                116b
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 RedStore (free/total)   109Kb/128Kb
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 Network Configuration:
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 IPv4: enabled
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 IPv6: enabled
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 MAC/IP address(es): 00:E0:06:C0:B2:3D / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b23d/64
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 HSM Port: 05000
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 Software Versions:
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 BBL 010 ABL 011 App 023
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 CPLD Version:
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 1.9
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 SCR Firmware Version:
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 OROS-R2.99-R1.20
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:19:23+0000        ttyUSB0 Audit on 19/3/2015 15:14:26 00100001
2015-03-19T15:19:23+0000        ttyUSB0
2015-03-19T15:22:42+0000        ttyUSB0 Audit on 19/3/2015 15:17:45 00200062
2015-03-19T15:22:42+0000        ttyUSB0
2015-03-19T15:24:16+0000        ttyUSB0 Audit on 19/3/2015 15:19:19 00200019 00400000C662156D
2015-03-19T15:24:16+0000        ttyUSB0
2015-03-19T15:25:34+0000        ttyUSB0 Audit on 19/3/2015 15:20:37 00200023 15400006AEB3296E
2015-03-19T15:25:34+0000        ttyUSB0
2015-03-19T15:26:05+0000        ttyUSB0 Audit on 19/3/2015 15:21:08 00200023 15400006E4F3296E
2015-03-19T15:26:05+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 HmcListener: Created IPv4 socket 7 on port 3000.
2015-03-19T15:27:13+0000        ttyUSB0
```

```
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 HmcListener: Created IPv6 socket 9 on port 3000.
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 Audit on 19/3/2015 15:22:16 00100003
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 Shutting down daemons...
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 AuditBuffer rx'd [-1] (3)
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 shutting down audit service.
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 Terminated
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 HmcListener::accept(): No such process
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:13+0000        ttyUSB0 Shutting down filesystems...
2015-03-19T15:27:13+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0 H1403032 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0 BBL CRC32: 0x757574CA
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0 Running applicationBootLoader at 0xEFDC0000
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0 H1403032 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:15+0000        ttyUSB0 ABL CRC32: 0xE7E0FA6A
2015-03-19T15:27:15+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 ####################################
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 ###     ABL tamper records         ###
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 ####################################
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 Current Tamper Counts (decimal 0-255):
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 ====================================
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 vextoosTamperCount:      0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 vintoosTamperCount:      42
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 vbboosTamperCount:       0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 maxstrtempTamperCount:   0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 minstrtempTamperCount:   0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 meshTamperCount:         0
```

```
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 extampSMKTamperCount:   0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 extampIMKTamperCount:   0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 tempdiffTamperCount:    0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 pfTamperCount:          42
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 restartTamperCount:     132
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 Current tamper bitmaps:
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 ======================
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 lastTamper bitmap:      0x0080 0b .... .... 1... ....  |EXT_POWER_DOWN
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 Bitmapped Change Record (most recent first):
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0 ============================================
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:16+0000        ttyUSB0
2015-03-19T15:27:17+0000        ttyUSB0 Running cryptoApplication at 0xEBF00000
2015-03-19T15:27:17+0000        ttyUSB0
2015-03-19T15:27:17+0000        ttyUSB0 Jumping to startup @ 0x001037B4
2015-03-19T15:27:17+0000        ttyUSB0
2015-03-19T15:27:17+0000        ttyUSB0 Board is P2020RDB
2015-03-19T15:27:17+0000        ttyUSB0
2015-03-19T15:27:17+0000        ttyUSB0 board_smp_init: 2 cpu
2015-03-19T15:27:17+0000        ttyUSB0
2015-03-19T15:27:17+0000        ttyUSB0
2015-03-19T15:27:17+0000        ttyUSB0
2015-03-19T15:27:17+0000        ttyUSB0 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T15:27:17+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0 Starting next program at v0015183c
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0 Starting K-Series Kernel
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0 Thu Mar 19 15:22:22 2015
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:18+0000        ttyUSB0 Starting auditd v2.0 ... started.
2015-03-19T15:27:18+0000        ttyUSB0
```

```
2015-03-19T15:27:18+0000        ttyUSB0 Interface 0 configured for IPv6.
2015-03-19T15:27:18+0000        ttyUSB0
2015-03-19T15:27:19+0000        ttyUSB0 Interface 0 configured for IPv4.
2015-03-19T15:27:19+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0 add net default: gateway ::: Network is unreachable
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0 Starting USB driver...
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:20+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running DES POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 DES POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running Triple DES POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Triple DES POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running AES POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 AES POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running SHA1 POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 SHA1 POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running SHA2 POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 SHA2 POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running RandomGen POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 RandomGen POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running RSA POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 RSA POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running DSA POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 DSA POST Test Passed
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 Running ECC POST Test
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0 ECC POST Test Passed
```

```
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:21+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 Keyper 9860-2  Serial Number H1403032
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 Memory Usage:
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 RAM (free/total)        197Mb/256Mb
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 Flash (free/total)      127Mb/128Mb
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0    black store          192b
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0    statistics           112b
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0    other                116b
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 RedStore (free/total)   109Kb/128Kb
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 Network Configuration:
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 IPv4: enabled
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 IPv6: enabled
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 MAC/IP address(es): 00:E0:06:C0:B2:3D / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b23d/64
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 HSM Port: 05000
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 Software Versions:
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 BBL 010 ABL 011 App 023
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 CPLD Version:
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 1.9
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 SCR Firmware Version:
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 OROS-R2.99-R1.20
2015-03-19T15:27:22+0000        ttyUSB0
```

```
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 HmcListener: Created IPv4 socket 7 on port 3000.
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:22+0000        ttyUSB0 HmcListener: Created IPv6 socket 8 on port 3000.
2015-03-19T15:27:22+0000        ttyUSB0
2015-03-19T15:27:23+0000        ttyUSB0 Audit on 19/3/2015 15:22:26 00100003
2015-03-19T15:27:23+0000        ttyUSB0
2015-03-19T15:28:54+0000        ttyUSB0 Audit on 19/3/2015 15:23:57 00200023 00400000C662156D
2015-03-19T15:28:54+0000        ttyUSB0
2015-03-19T15:29:18+0000        ttyUSB0 Audit on 19/3/2015 15:24:22 00200023 15400006AEB3296E
2015-03-19T15:29:18+0000        ttyUSB0
2015-03-19T15:31:50+0000        ttyUSB0 Audit on 19/3/2015 15:26:54 00200077 00400000E962156D
2015-03-19T15:31:50+0000        ttyUSB0
2015-03-19T15:34:27+0000        ttyUSB0 Audit on 19/3/2015 15:29:30 00200063 00400000ECE2156D
2015-03-19T15:34:27+0000        ttyUSB0
2015-03-19T15:36:23+0000        ttyUSB0 Audit on 19/3/2015 15:31:24 00200010 00400000E922156D
2015-03-19T15:36:23+0000        ttyUSB0
2015-03-19T15:37:53+0000        ttyUSB0 Audit on 19/3/2015 15:32:56 0020006b 00400000ED62156D
2015-03-19T15:37:53+0000        ttyUSB0
2015-03-19T15:38:25+0000        ttyUSB0 Audit on 19/3/2015 15:33:29 0020006b 00400000E8E2156D
2015-03-19T15:38:25+0000        ttyUSB0
2015-03-19T15:39:07+0000        ttyUSB0 Audit on 19/3/2015 15:34:11 00200039
2015-03-19T15:39:07+0000        ttyUSB0
2015-03-19T15:39:21+0000        ttyUSB0 Audit on 19/3/2015 15:34:24 0020003b
2015-03-19T15:39:21+0000        ttyUSB0
2015-03-19T15:39:39+0000        ttyUSB0 Audit on 19/3/2015 15:34:42 00200041
2015-03-19T15:39:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 HSM Status
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 ====================
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Keyper 9860-2
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Serial Number H1403032
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Date(dd/mm/yyyy) 19/3/2015  Time 15:35:42
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Software Versions:
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 BBL 010 ABL 011 App 023
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
```

```
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 CPLD Version:
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 1.9
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 SCR Firmware Version:
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 OROS-R2.99-R1.20
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Memory Usage:
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 RAM (free/total)        197Mb/256Mb
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Flash (free/total)      127Mb/128Mb
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0    black store          328b
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0    statistics           112b
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0    other                116b
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 RedStore (free/total)   109Kb/128Kb
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Network Configuration:
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 IPv4: enabled
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 IPv6: enabled
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 MAC/IP address(es): 00:E0:06:C0:B2:3D / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b23d/64
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 HSM Port: 05000
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 tsec0: flags=8a43<UP,BROADCAST,RUNNING,ALLMULTI,SIMPLEX,MULTICAST> mtu 1500
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0         capabilities rx=7<IP4CSUM,TCP4CSUM,UDP4CSUM>
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0         capabilities tx=0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0         enabled=0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0         address: 00:e0:06:c0:b2:3d
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0         media: Ethernet none
2015-03-19T15:40:39+0000        ttyUSB0
```

```
2015-03-19T15:40:39+0000 ttyUSB0         inet 192.168.0.2 netmask 0xffffff00 broadcast 192.168.0.255
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0         inet6 2001::2e0:6ff:fec0:b23d prefixlen 64
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0         inet6 fe80::2e0:6ff:fec0:b23d%\037\220@ec0 prefixlen 64 scopeid 0x2
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Current HSM State: Secured Off-line
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Modes: (1=Enabled 0=Disabled)
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Global Key Export    1  App Key Import       0  App Key Export       0  Asymmetric Key Gen   1
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Symmetric Key Gen    1  Symmetric Key Derive 0  Signing              1  Signature Verify     1
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 MAC Generation       1  MAC Verification     1  Encrypt / Decrypt    1  Delete Asym Key      1
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Delete Sym Key       1  Output Key Details   1  Output Key Summary   1  Suite B Algorithms   1
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Non Suite B Algs     1  Auto Online          0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Other Modes:
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 AES SMK                 FIPS Mode
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Battery ok
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 ####################################
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 ###     ABL tamper records       ###
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 ####################################
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 Current Tamper Counts (decimal 0-255):
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 ========================================
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 vextoosTamperCount:     0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 vintoosTamperCount:     0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 vbboosTamperCount:      0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 maxstrtempTamperCount:  0
2015-03-19T15:40:39+0000 ttyUSB0
2015-03-19T15:40:39+0000 ttyUSB0 minstrtempTamperCount:  0
```

```
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 meshTamperCount:        0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 extampSMKTamperCount:   0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 extampIMKTamperCount:   0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 tempdiffTamperCount:    0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 pfTamperCount:          0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 restartTamperCount:     0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Current tamper bitmaps:
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 ========================
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 lastTamper bitmap:      0x0000 0b .... .... .... ....
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 Bitmapped Change Record (most recent first):
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 ========================================
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 DRBG Instantiate Health Test On Demand Passed
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 DRBG Generate Health Test On Demand Passed
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T15:40:39+0000        ttyUSB0 DRBG Reseed Health Test On Demand Passed
2015-03-19T15:40:39+0000        ttyUSB0
2015-03-19T16:21:16+0000        ttyUSB0 Audit on 19/3/2015 16:16:20 0020006b 00400000ED62156D
2015-03-19T16:21:16+0000        ttyUSB0
2015-03-19T16:21:41+0000        ttyUSB0 Audit on 19/3/2015 16:16:45 0020006b 00400000E962156D
2015-03-19T16:21:41+0000        ttyUSB0
2015-03-19T16:22:37+0000        ttyUSB0 Audit on 19/3/2015 16:17:40 00200025 00400000E9A2156D
2015-03-19T16:22:37+0000        ttyUSB0
2015-03-19T16:22:53+0000        ttyUSB0 Audit on 19/3/2015 16:17:57 00200025 00400000EAE2156D
2015-03-19T16:22:53+0000        ttyUSB0
2015-03-19T16:22:54+0000        ttyUSB0 Audit on 19/3/2015 16:17:57 00200005
2015-03-19T16:22:54+0000        ttyUSB0
2015-03-19T16:24:08+0000        ttyUSB0 Audit on 19/3/2015 16:19:12 00200016 Kkufpkt
2015-03-19T16:24:08+0000        ttyUSB0
2015-03-19T16:24:08+0000        ttyUSB0 Audit on 19/3/2015 16:19:12 00200015 00400000EA22156D
2015-03-19T16:24:08+0000        ttyUSB0
2015-03-19T16:24:09+0000        ttyUSB0 Audit on 19/3/2015 16:19:12 00200018
2015-03-19T16:24:09+0000        ttyUSB0
```

```
2015-03-19T16:25:12+0000        ttyUSB0 Audit on 19/3/2015 16:20:16 00200069 00400000ECE2156D
2015-03-19T16:25:12+0000        ttyUSB0
2015-03-19T16:25:38+0000        ttyUSB0 Audit on 19/3/2015 16:20:41 00200069 00400000ED22156D
2015-03-19T16:25:38+0000        ttyUSB0
2015-03-19T16:25:40+0000        ttyUSB0
2015-03-19T16:25:40+0000        ttyUSB0
2015-03-19T16:25:40+0000        ttyUSB0 TcpListener: Created IPv4 socket 11 on port 5000.
2015-03-19T16:25:40+0000        ttyUSB0
2015-03-19T16:25:40+0000        ttyUSB0
2015-03-19T16:25:40+0000        ttyUSB0
2015-03-19T16:25:40+0000        ttyUSB0 TcpListener: Created IPv6 socket 18 on port 5000.
2015-03-19T16:25:40+0000        ttyUSB0
2015-03-19T16:25:41+0000        ttyUSB0 Audit on 19/3/2015 16:20:44 00100002
2015-03-19T16:25:41+0000        ttyUSB0
2015-03-19T16:27:26+0000        ttyUSB0
2015-03-19T16:27:26+0000        ttyUSB0
2015-03-19T16:27:26+0000        ttyUSB0 TcpListener: Accepted connection on socket 19 from address 192.168.0.1.
2015-03-19T16:27:26+0000        ttyUSB0
2015-03-19T16:27:26+0000        ttyUSB0
2015-03-19T16:27:26+0000        ttyUSB0
2015-03-19T16:27:26+0000        ttyUSB0 CryptoTask: Closing connection on socket 19 from address 192.168.0.1.
2015-03-19T16:27:26+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 H1403032 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 BBL CRC32: 0x757574CA
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 Running applicationBootLoader at 0xEFDC0000
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 H1403032 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 ABL CRC32: 0xE7E0FA6A
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 ####################################
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 ###     ABL tamper records       ###
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 ####################################
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 Current Tamper Counts (decimal 0-255):
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 ====================================
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 vextoosTamperCount:     0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 vintoosTamperCount:     42
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 vbboosTamperCount:      0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 maxstrtempTamperCount:  0
```

```
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 minstrtempTamperCount:  0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 meshTamperCount:        0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 extampSMKTamperCount:   0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 extampIMKTamperCount:   0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 tempdiffTamperCount:    0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 pfTamperCount:          42
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 restartTamperCount:     134
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 Current tamper bitmaps:
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 ========================
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 lastTamper bitmap:      0x0080 0b .... .... 1... ....  |EXT_POWER_DOWN
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 Bitmapped Change Record (most recent first):
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0 ============================================
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:37+0000        ttyUSB0
2015-03-19T16:28:38+0000        ttyUSB0 Running cryptoApplication at 0xEBF00000
2015-03-19T16:28:38+0000        ttyUSB0
2015-03-19T16:28:38+0000        ttyUSB0 Jumping to startup @ 0x001037B4
2015-03-19T16:28:38+0000        ttyUSB0
2015-03-19T16:28:38+0000        ttyUSB0 Board is P2020RDB
2015-03-19T16:28:38+0000        ttyUSB0
2015-03-19T16:28:38+0000        ttyUSB0 board_smp_init: 2 cpu
2015-03-19T16:28:38+0000        ttyUSB0
2015-03-19T16:28:38+0000        ttyUSB0
2015-03-19T16:28:38+0000        ttyUSB0
2015-03-19T16:28:38+0000        ttyUSB0 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T16:28:38+0000        ttyUSB0
2015-03-19T16:28:39+0000        ttyUSB0
2015-03-19T16:28:39+0000        ttyUSB0
2015-03-19T16:28:39+0000        ttyUSB0 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T16:28:39+0000        ttyUSB0
2015-03-19T16:28:39+0000        ttyUSB0 Starting next program at v0015183c
2015-03-19T16:28:39+0000        ttyUSB0
2015-03-19T16:28:39+0000        ttyUSB0 Starting K-Series Kernel
2015-03-19T16:28:39+0000        ttyUSB0
2015-03-19T16:28:39+0000        ttyUSB0 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T16:28:39+0000        ttyUSB0
```

```
2015-03-19T16:28:39+0000        ttyUSB0 Thu Mar 19 16:23:43 2015
2015-03-19T16:28:39+0000        ttyUSB0
2015-03-19T16:28:40+0000        ttyUSB0 Starting auditd v2.0 ... started.
2015-03-19T16:28:40+0000        ttyUSB0
2015-03-19T16:28:40+0000        ttyUSB0 Interface 0 configured for IPv6.
2015-03-19T16:28:40+0000        ttyUSB0
2015-03-19T16:28:40+0000        ttyUSB0 Interface 0 configured for IPv4.
2015-03-19T16:28:40+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0 add net default: gateway ::: Network is unreachable
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0 Starting USB driver...
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:41+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running DES POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 DES POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running Triple DES POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Triple DES POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running AES POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 AES POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running SHA1 POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 SHA1 POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running SHA2 POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 SHA2 POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running RandomGen POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 RandomGen POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running RSA POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 RSA POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running DSA POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 DSA POST Test Passed
```

```
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 Running ECC POST Test
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:43+0000        ttyUSB0 ECC POST Test Passed
2015-03-19T16:28:43+0000        ttyUSB0
2015-03-19T16:28:46+0000        ttyUSB0 Audit on 19/3/2015 16:23:46 00100008
2015-03-19T16:28:46+0000        ttyUSB0
2015-03-19T16:28:46+0000        ttyUSB0
2015-03-19T16:28:46+0000        ttyUSB0
2015-03-19T16:28:46+0000        ttyUSB0
2015-03-19T16:28:46+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 Keyper 9860-2  Serial Number H1403032
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 Memory Usage:
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 RAM (free/total)        197Mb/256Mb
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 Flash (free/total)      127Mb/128Mb
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0    black store          400b
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0    statistics           112b
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0    other                116b
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 RedStore (free/total)   109Kb/128Kb
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 Network Configuration:
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 IPv4: enabled
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 IPv6: enabled
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 MAC/IP address(es): 00:E0:06:C0:B2:3D / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b23d/64
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 HSM Port: 05000
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 Software Versions:
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 BBL 010 ABL 011 App 023
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 CPLD Version:
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 1.9
2015-03-19T16:28:47+0000        ttyUSB0
```

```
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 SCR Firmware Version:
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 OROS-R2.99-R1.20
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 HmcListener: Created IPv4 socket 10 on port 3000.
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 HmcListener: Created IPv6 socket 11 on port 3000.
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:28:47+0000        ttyUSB0 Audit on 19/3/2015 16:23:50 00100003
2015-03-19T16:28:47+0000        ttyUSB0
2015-03-19T16:30:15+0000        ttyUSB0 Audit on 19/3/2015 16:25:18 00200023 15400006AEB3296E
2015-03-19T16:30:15+0000        ttyUSB0
2015-03-19T16:30:42+0000        ttyUSB0 Audit on 19/3/2015 16:25:45 00200023 00400000C662156D
2015-03-19T16:30:42+0000        ttyUSB0
2015-03-19T16:31:08+0000        ttyUSB0 Audit on 19/3/2015 16:26:11 0020001f
2015-03-19T16:31:08+0000        ttyUSB0
2015-03-19T16:31:13+0000        ttyUSB0 Shutting down daemons...
2015-03-19T16:31:13+0000        ttyUSB0
2015-03-19T16:31:13+0000        ttyUSB0 AuditBuffer rx'd [-1] (3)
2015-03-19T16:31:13+0000        ttyUSB0
2015-03-19T16:31:13+0000        ttyUSB0 shutting down audit service.
2015-03-19T16:31:13+0000        ttyUSB0
2015-03-19T16:31:13+0000        ttyUSB0 HmcListener::accept(): No such process
2015-03-19T16:31:13+0000        ttyUSB0
2015-03-19T16:31:13+0000        ttyUSB0 Shutting down filesystems...
2015-03-19T16:31:13+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0 H1403032 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0 BBL CRC32: 0x757574CA
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0 Running applicationBootLoader at 0xEFDC0000
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0 H1403032 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:15+0000        ttyUSB0 ABL CRC32: 0xE7E0FA6A
2015-03-19T16:31:15+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 ######################################
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 ###     ABL tamper records       ###
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 ######################################
```

```
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 Current Tamper Counts (decimal 0-255):
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 ======================================
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 vextoosTamperCount:     0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 vintoosTamperCount:     42
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 vbboosTamperCount:      0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 maxstrtempTamperCount:  0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 minstrtempTamperCount:  0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 meshTamperCount:        0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 extampSMKTamperCount:   0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 extampIMKTamperCount:   0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 tempdiffTamperCount:    0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 pfTamperCount:          42
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 restartTamperCount:     134
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 Current tamper bitmaps:
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 ======================
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 lastTamper bitmap:      0x0080 0b .... .... 1... ....  |EXT_POWER_DOWN
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 Bitmapped Change Record (most recent first):
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0 ============================================
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:16+0000        ttyUSB0
2015-03-19T16:31:17+0000        ttyUSB0 Running cryptoApplication at 0xEBF00000
2015-03-19T16:31:17+0000        ttyUSB0
2015-03-19T16:31:17+0000        ttyUSB0 Jumping to startup @ 0x001037B4
2015-03-19T16:31:17+0000        ttyUSB0
2015-03-19T16:31:17+0000        ttyUSB0 Board is P2020RDB
2015-03-19T16:31:17+0000        ttyUSB0
2015-03-19T16:31:17+0000        ttyUSB0 board_smp_init: 2 cpu
2015-03-19T16:31:17+0000        ttyUSB0
2015-03-19T16:31:17+0000        ttyUSB0
2015-03-19T16:31:17+0000        ttyUSB0
```

```
2015-03-19T16:31:17+0000        ttyUSB0 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T16:31:17+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0 Starting next program at v0015183c
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0 Starting K-Series Kernel
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0 Thu Mar 19 16:26:22 2015
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0 Starting auditd v2.0 ... started.
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:18+0000        ttyUSB0 Interface 0 configured for IPv6.
2015-03-19T16:31:18+0000        ttyUSB0
2015-03-19T16:31:19+0000        ttyUSB0 Interface 0 configured for IPv4.
2015-03-19T16:31:19+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0 add net default: gateway ::: Network is unreachable
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0 route: writing to routing socket: Network is unreachable
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0 Starting USB driver...
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:20+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running DES POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 DES POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running Triple DES POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Triple DES POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running AES POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 AES POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running SHA1 POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 SHA1 POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running SHA2 POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 SHA2 POST Test Passed
```

```
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running RandomGen POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 RandomGen POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running RSA POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 RSA POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running DSA POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 DSA POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Running ECC POST Test
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 ECC POST Test Passed
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Keyper 9860-2  Serial Number H1403032
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:22+0000        ttyUSB0 Memory Usage:
2015-03-19T16:31:22+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 RAM (free/total)        197Mb/256Mb
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 Flash (free/total)      127Mb/128Mb
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0    black store          44b
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0    statistics           112b
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0    other                116b
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 RedStore (free/total)   109Kb/128Kb
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 Network Configuration:
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 IPv4: enabled
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 IPv6: enabled
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 MAC/IP address(es): 00:E0:06:C0:B2:3D / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b23d/64
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 HSM Port: 05000
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
```

```
2015-03-19T16:31:23+0000        ttyUSB0 Software Versions:
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 BBL 010 ABL 011 App 023
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 CPLD Version:
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 1.9
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 SCR Firmware Version:
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 OROS-R2.99-R1.20
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0
2015-03-19T16:31:23+0000        ttyUSB0 Audit on 19/3/2015 16:26:26 00100001
2015-03-19T16:31:23+0000        ttyUSB0
```

```
2015-03-19T15:50:08+0000        ttyUSB1 ÿþþÿ
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 H1411011 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 BBL CRC32: 0x757574CA
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 Running applicationBootLoader at 0xEFDC0000
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 H1411011 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 ABL CRC32: 0xE7E0FA6A
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 ####################################
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 ###     ABL tamper records       ###
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 ####################################
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 Current Tamper Counts (decimal 0-255):
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 ====================================
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 vextoosTamperCount:     0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 vintoosTamperCount:     10
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 vbboosTamperCount:      0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 maxstrtempTamperCount:  0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 minstrtempTamperCount:  0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 meshTamperCount:        0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 extampSMKTamperCount:   0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 extampIMKTamperCount:   0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 tempdiffTamperCount:    0
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 pfTamperCount:          10
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 restartTamperCount:     19
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 Current tamper bitmaps:
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 ======================
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:08+0000        ttyUSB1 currentTamper bitmap:   0x0000 0b .... .... .... ....
```

EAST HSM4 Acceptance Testing KD

```
2015-03-19T15:50:08+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1 lastTamper bitmap:      0x0000 0b .... .... .... ....
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1 Bitmapped Change Record (most recent first):
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1 ========================================
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1 Running cryptoApplication at 0xEBF00000
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1 Jumping to startup @ 0x001037B4
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1 Board is P2020RDB
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1 board_smp_init: 2 cpu
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:09+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1 Starting next program at v0015183c
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1 Starting K-Series Kernel
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:10+0000        ttyUSB1 Thu Mar 19 15:44:01 2015
2015-03-19T15:50:10+0000        ttyUSB1
2015-03-19T15:50:11+0000        ttyUSB1 Starting auditd v2.0 ... started.
2015-03-19T15:50:11+0000        ttyUSB1
2015-03-19T15:50:11+0000        ttyUSB1 Interface 0 configured for IPv6.
2015-03-19T15:50:11+0000        ttyUSB1
2015-03-19T15:50:11+0000        ttyUSB1 Interface 0 configured for IPv4.
2015-03-19T15:50:11+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T15:50:12+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1 add net default: gateway ::: Network is unreachable
2015-03-19T15:50:12+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T15:50:12+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T15:50:12+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1 Starting USB driver...
2015-03-19T15:50:12+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T15:50:12+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1
2015-03-19T15:50:12+0000        ttyUSB1
```

```
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running DES POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 DES POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running Triple DES POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Triple DES POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running AES POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 AES POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running SHA1 POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 SHA1 POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running SHA2 POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 SHA2 POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running RandomGen POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 RandomGen POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running RSA POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 RSA POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running DSA POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 DSA POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Running ECC POST Test
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 ECC POST Test Passed
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1 Audit on 19/3/2015 15:44:04 00100008
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:14+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 Keyper 9860-2  Serial Number H1411011
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 Memory Usage:
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 RAM (free/total)        197Mb/256Mb
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 Flash (free/total)      127Mb/128Mb
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1    black store          44b
```

```
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1    statistics           112b
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1    other                116b
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 RedStore (free/total)   109Kb/128Kb
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 Network Configuration:
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 IPv4: enabled
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 IPv6: enabled
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 MAC/IP address(es): 00:E0:06:C0:B3:2A / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b32a/64
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 HSM Port: 05000
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 Software Versions:
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 BBL 010 ABL 011 App 023
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 CPLD Version:
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 1.9
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 SCR Firmware Version:
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1 OROS-R2.99-R1.20
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:15+0000        ttyUSB1
2015-03-19T15:50:16+0000        ttyUSB1 Audit on 19/3/2015 15:44:05 00100001
2015-03-19T15:50:16+0000        ttyUSB1
2015-03-19T15:52:18+0000        ttyUSB1 Audit on 19/3/2015 15:46:07 00200035 00400000E9E2156D
2015-03-19T15:52:18+0000        ttyUSB1
2015-03-19T15:52:39+0000        ttyUSB1 Audit on 19/3/2015 15:46:29 00200035 00400000E922156D
2015-03-19T15:52:39+0000        ttyUSB1
2015-03-19T15:52:40+0000        ttyUSB1 Audit on 19/3/2015 15:46:29 0020000e 00400000E922156D
2015-03-19T15:52:40+0000        ttyUSB1
2015-03-19T15:54:03+0000        ttyUSB1 Audit on 19/3/2015 15:47:53 00200023 15400006E4F3296E
2015-03-19T15:54:03+0000        ttyUSB1
2015-03-19T15:54:27+0000        ttyUSB1 Audit on 19/3/2015 15:48:17 00200023 00400000C662156D
2015-03-19T15:54:27+0000        ttyUSB1
2015-03-19T15:55:27+0000        ttyUSB1
2015-03-19T15:55:27+0000        ttyUSB1
```

```
2015-03-19T15:55:27+0000        ttyUSB1 HmcListener: Created IPv4 socket 7 on port 3000.
2015-03-19T15:55:27+0000        ttyUSB1
2015-03-19T15:55:27+0000        ttyUSB1
2015-03-19T15:55:27+0000        ttyUSB1
2015-03-19T15:55:27+0000        ttyUSB1 HmcListener: Created IPv6 socket 9 on port 3000.
2015-03-19T15:55:27+0000        ttyUSB1
2015-03-19T15:55:28+0000        ttyUSB1 Audit on 19/3/2015 15:49:17 00100003
2015-03-19T15:55:28+0000        ttyUSB1
2015-03-19T15:55:28+0000        ttyUSB1 Shutting down daemons...
2015-03-19T15:55:28+0000        ttyUSB1
2015-03-19T15:55:28+0000        ttyUSB1 AuditBuffer rx'd [-1] (3)
2015-03-19T15:55:28+0000        ttyUSB1
2015-03-19T15:55:28+0000        ttyUSB1 shutting down audit service.
2015-03-19T15:55:28+0000        ttyUSB1
2015-03-19T15:55:28+0000        ttyUSB1 Terminated
2015-03-19T15:55:28+0000        ttyUSB1
2015-03-19T15:55:28+0000        ttyUSB1 HmcListener::accept(): No such process
2015-03-19T15:55:28+0000        ttyUSB1
2015-03-19T15:55:28+0000        ttyUSB1 Shutting down filesystems...
2015-03-19T15:55:28+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 H1411011 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 BBL CRC32: 0x757574CA
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 Running applicationBootLoader at 0xEFDC0000
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 H1411011 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 ABL CRC32: 0xE7E0FA6A
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 ######################################
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 ###     ABL tamper records       ###
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 ######################################
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 Current Tamper Counts (decimal 0-255):
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 ======================================
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 vextoosTamperCount:     0
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 vintoosTamperCount:     10
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 vbboosTamperCount:      0
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 maxstrtempTamperCount:  0
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 minstrtempTamperCount:  0
```

```
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 meshTamperCount:        0
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 extampSMKTamperCount:   0
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 extampIMKTamperCount:   0
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 tempdiffTamperCount:    0
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 pfTamperCount:          10
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 restartTamperCount:     19
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 Current tamper bitmaps:
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 ========================
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 lastTamper bitmap:      0x0000 0b .... .... .... ....
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 Bitmapped Change Record (most recent first):
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1 ============================================
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:30+0000        ttyUSB1
2015-03-19T15:55:31+0000        ttyUSB1 Running cryptoApplication at 0xEBF00000
2015-03-19T15:55:31+0000        ttyUSB1
2015-03-19T15:55:31+0000        ttyUSB1 Jumping to startup @ 0x001037B4
2015-03-19T15:55:31+0000        ttyUSB1
2015-03-19T15:55:31+0000        ttyUSB1 Board is P2020RDB
2015-03-19T15:55:31+0000        ttyUSB1
2015-03-19T15:55:31+0000        ttyUSB1 board_smp_init: 2 cpu
2015-03-19T15:55:31+0000        ttyUSB1
2015-03-19T15:55:31+0000        ttyUSB1
2015-03-19T15:55:31+0000        ttyUSB1
2015-03-19T15:55:31+0000        ttyUSB1 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T15:55:31+0000        ttyUSB1
2015-03-19T15:55:32+0000        ttyUSB1
2015-03-19T15:55:32+0000        ttyUSB1
2015-03-19T15:55:32+0000        ttyUSB1 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T15:55:32+0000        ttyUSB1
2015-03-19T15:55:32+0000        ttyUSB1 Starting next program at v0015183c
2015-03-19T15:55:32+0000        ttyUSB1
2015-03-19T15:55:32+0000        ttyUSB1 Starting K-Series Kernel
2015-03-19T15:55:32+0000        ttyUSB1
2015-03-19T15:55:32+0000        ttyUSB1 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T15:55:32+0000        ttyUSB1
2015-03-19T15:55:32+0000        ttyUSB1 Thu Mar 19 15:49:22 2015
2015-03-19T15:55:32+0000        ttyUSB1
```

```
2015-03-19T15:55:33+0000        ttyUSB1 Starting auditd v2.0 ... started.
2015-03-19T15:55:33+0000        ttyUSB1
2015-03-19T15:55:33+0000        ttyUSB1 Interface 0 configured for IPv6.
2015-03-19T15:55:33+0000        ttyUSB1
2015-03-19T15:55:33+0000        ttyUSB1 Interface 0 configured for IPv4.
2015-03-19T15:55:33+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1 add net default: gateway ::: Network is unreachable
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1 Starting USB driver...
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:34+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running DES POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 DES POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running Triple DES POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Triple DES POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running AES POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 AES POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running SHA1 POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 SHA1 POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running SHA2 POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 SHA2 POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running RandomGen POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 RandomGen POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running RSA POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 RSA POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running DSA POST Test
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 DSA POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 Running ECC POST Test
```

```
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1 ECC POST Test Passed
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:36+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 Keyper 9860-2  Serial Number H1411011
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 Memory Usage:
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 RAM (free/total)        197Mb/256Mb
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 Flash (free/total)      127Mb/128Mb
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1    black store          192b
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1    statistics           112b
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1    other                116b
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 RedStore (free/total)   109Kb/128Kb
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 Network Configuration:
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 IPv4: enabled
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 IPv6: enabled
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 MAC/IP address(es): 00:E0:06:C0:B3:2A / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b32a/64
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 HSM Port: 05000
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 Software Versions:
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 BBL 010 ABL 011 App 023
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 CPLD Version:
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 1.9
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 SCR Firmware Version:
2015-03-19T15:55:37+0000        ttyUSB1
```

```
2015-03-19T15:55:37+0000        ttyUSB1 OROS-R2.99-R1.20
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 HmcListener: Created IPv4 socket 7 on port 3000.
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 HmcListener: Created IPv6 socket 8 on port 3000.
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:55:37+0000        ttyUSB1 Audit on 19/3/2015 15:49:26 00100003
2015-03-19T15:55:37+0000        ttyUSB1
2015-03-19T15:56:37+0000        ttyUSB1 Audit on 19/3/2015 15:50:26 0020006b 00400000E962156D
2015-03-19T15:56:37+0000        ttyUSB1
2015-03-19T15:57:04+0000        ttyUSB1 Audit on 19/3/2015 15:50:53 0020006b 00400000ED62156D
2015-03-19T15:57:04+0000        ttyUSB1
2015-03-19T15:57:29+0000        ttyUSB1 Audit on 19/3/2015 15:51:18 00200039
2015-03-19T15:57:29+0000        ttyUSB1
2015-03-19T15:57:43+0000        ttyUSB1 Audit on 19/3/2015 15:51:32 0020003b
2015-03-19T15:57:43+0000        ttyUSB1
2015-03-19T15:57:55+0000        ttyUSB1 Audit on 19/3/2015 15:51:44 00200041
2015-03-19T15:57:55+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 HSM Status
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 ==================
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 Keyper 9860-2
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 Serial Number H1411011
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 Date(dd/mm/yyyy) 19/3/2015  Time 15:52:30
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 Software Versions:
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 BBL 010 ABL 011 App 023
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 CPLD Version:
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 1.9
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
```

```
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 SCR Firmware Version:
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 OROS-R2.99-R1.20
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 Memory Usage:
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 RAM (free/total)        197Mb/256Mb
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 Flash (free/total)      127Mb/128Mb
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1    black store          328b
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1    statistics           112b
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1    other                116b
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 RedStore (free/total)   109Kb/128Kb
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 Network Configuration:
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 IPv4: enabled
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 IPv6: enabled
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 MAC/IP address(es): 00:E0:06:C0:B3:2A / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b32a/64
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 HSM Port: 05000
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1 tsec0: flags=8a43<UP,BROADCAST,RUNNING,ALLMULTI,SIMPLEX,MULTICAST> mtu 1500
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1         capabilities rx=7<IP4CSUM,TCP4CSUM,UDP4CSUM>
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1         capabilities tx=0
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1         enabled=0
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1         address: 00:e0:06:c0:b3:2a
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1         media: Ethernet none
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1         inet 192.168.0.2 netmask 0xffffff00 broadcast 192.168.0.255
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:41+0000        ttyUSB1         inet6 2001::2e0:6ff:fec0:b32a prefixlen 64
2015-03-19T15:58:41+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1         inet6 fe80::2e0:6ff:fec0:b32aH\037\220@ec0 prefixlen 64 scopeid 0x2
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
```

```
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Current HSM State: Secured Off-line
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Modes: (1=Enabled 0=Disabled)
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Global Key Export    1  App Key Import       0  App Key Export       0  Asymmetric Key Gen   1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Symmetric Key Gen    1  Symmetric Key Derive 0  Signing              1  Signature Verify     1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 MAC Generation       1  MAC Verification     1  Encrypt / Decrypt    1  Delete Asym Key      1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Delete Sym Key       1  Output Key Details   1  Output Key Summary   1  Suite B Algorithms   1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Non Suite B Algs     1  Auto Online          0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Other Modes:
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 AES SMK                 FIPS Mode
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Battery ok
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 ####################################
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 ###     ABL tamper records       ###
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 ####################################
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Current Tamper Counts (decimal 0-255):
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 ====================================
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 vextoosTamperCount:     0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 vintoosTamperCount:     0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 vbboosTamperCount:      0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 maxstrtempTamperCount:  0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 minstrtempTamperCount:  0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 meshTamperCount:        0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 extampSMKTamperCount:   0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 extampIMKTamperCount:   0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 tempdiffTamperCount:    0
```

```
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 pfTamperCount:          0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 restartTamperCount:     0
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Current tamper bitmaps:
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 ========================
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 lastTamper bitmap:      0x0000 0b .... .... .... ....
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 Bitmapped Change Record (most recent first):
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 ============================================
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 DRBG Instantiate Health Test On Demand Passed
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 DRBG Generate Health Test On Demand Passed
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T15:58:42+0000        ttyUSB1 DRBG Reseed Health Test On Demand Passed
2015-03-19T15:58:42+0000        ttyUSB1
2015-03-19T16:01:04+0000        ttyUSB1 Audit on 19/3/2015 15:54:50 0020001c
2015-03-19T16:01:04+0000        ttyUSB1
2015-03-19T16:02:15+0000        ttyUSB1 Audit on 19/3/2015 15:56:04 0020002d 00400000E9A2156D
2015-03-19T16:02:15+0000        ttyUSB1
2015-03-19T16:03:00+0000        ttyUSB1 Audit on 19/3/2015 15:56:48 0020002d 00400000EA62156D
2015-03-19T16:03:00+0000        ttyUSB1
2015-03-19T16:03:42+0000        ttyUSB1 Audit on 19/3/2015 15:57:31 0020002d 00400000EAE2156D
2015-03-19T16:03:42+0000        ttyUSB1
2015-03-19T16:04:24+0000        ttyUSB1 Audit on 19/3/2015 15:58:13 0020002d 00400000EAA2156D
2015-03-19T16:04:24+0000        ttyUSB1
2015-03-19T16:05:45+0000        ttyUSB1 Audit on 19/3/2015 15:59:34 00200007
2015-03-19T16:05:45+0000        ttyUSB1
2015-03-19T16:07:15+0000        ttyUSB1 Audit on 19/3/2015 16:01:04 00200069 0880004AB3F3296D
2015-03-19T16:07:15+0000        ttyUSB1
2015-03-19T16:07:41+0000        ttyUSB1 Audit on 19/3/2015 16:01:30 00200069 00400000ED22156D
2015-03-19T16:07:41+0000        ttyUSB1
2015-03-19T16:07:43+0000        ttyUSB1
2015-03-19T16:07:43+0000        ttyUSB1
2015-03-19T16:07:43+0000        ttyUSB1 TcpListener: Created IPv4 socket 11 on port 5000.
2015-03-19T16:07:43+0000        ttyUSB1
2015-03-19T16:07:43+0000        ttyUSB1
2015-03-19T16:07:43+0000        ttyUSB1
2015-03-19T16:07:43+0000        ttyUSB1 TcpListener: Created IPv6 socket 16 on port 5000.
2015-03-19T16:07:43+0000        ttyUSB1
```

```
2015-03-19T16:07:43+0000        ttyUSB1 Audit on 19/3/2015 16:01:32 00100002
2015-03-19T16:07:43+0000        ttyUSB1
2015-03-19T16:10:51+0000        ttyUSB1
2015-03-19T16:10:51+0000        ttyUSB1
2015-03-19T16:10:51+0000        ttyUSB1 TcpListener: Accepted connection on socket 17 from address 192.168.0.1.
2015-03-19T16:10:51+0000        ttyUSB1
2015-03-19T16:10:51+0000        ttyUSB1
2015-03-19T16:10:51+0000        ttyUSB1
2015-03-19T16:10:51+0000        ttyUSB1 CryptoTask: Closing connection on socket 17 from address 192.168.0.1.
2015-03-19T16:10:51+0000        ttyUSB1
2015-03-19T16:11:58+0000        ttyUSB1
2015-03-19T16:11:58+0000        ttyUSB1
2015-03-19T16:11:58+0000        ttyUSB1 TcpListener: Accepted connection on socket 17 from address 192.168.0.1.
2015-03-19T16:11:58+0000        ttyUSB1
2015-03-19T16:12:02+0000        ttyUSB1
2015-03-19T16:12:02+0000        ttyUSB1
2015-03-19T16:12:02+0000        ttyUSB1 CryptoTask: Closing connection on socket 17 from address 192.168.0.1.
2015-03-19T16:12:02+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 H1411011 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 BBL CRC32: 0x757574CA
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 Running applicationBootLoader at 0xEFDC0000
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 H1411011 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 ABL CRC32: 0xE7E0FA6A
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 ####################################
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 ###     ABL tamper records       ###
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 ####################################
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 Current Tamper Counts (decimal 0-255):
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 ====================================
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 vextoosTamperCount:     0
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 vintoosTamperCount:     10
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 vbboosTamperCount:      0
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 maxstrtempTamperCount:  0
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 minstrtempTamperCount:  0
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 meshTamperCount:        0
```

```
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 extampSMKTamperCount:   0
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 extampIMKTamperCount:   0
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 tempdiffTamperCount:    0
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 pfTamperCount:          10
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 restartTamperCount:     21
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 Current tamper bitmaps:
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 ======================
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 lastTamper bitmap:      0x0080 0b .... .... 1... ....  |EXT_POWER_DOWN
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 Bitmapped Change Record (most recent first):
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1 ============================================
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:46+0000        ttyUSB1
2015-03-19T16:15:47+0000        ttyUSB1 Running cryptoApplication at 0xEBF00000
2015-03-19T16:15:47+0000        ttyUSB1
2015-03-19T16:15:47+0000        ttyUSB1 Jumping to startup @ 0x001037B4
2015-03-19T16:15:47+0000        ttyUSB1
2015-03-19T16:15:47+0000        ttyUSB1 Board is P2020RDB
2015-03-19T16:15:47+0000        ttyUSB1
2015-03-19T16:15:47+0000        ttyUSB1 board_smp_init: 2 cpu
2015-03-19T16:15:47+0000        ttyUSB1
2015-03-19T16:15:47+0000        ttyUSB1
2015-03-19T16:15:47+0000        ttyUSB1
2015-03-19T16:15:47+0000        ttyUSB1 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T16:15:47+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T16:15:48+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1 Starting next program at v0015183c
2015-03-19T16:15:48+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1 Starting K-Series Kernel
2015-03-19T16:15:48+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T16:15:48+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1 Thu Mar 19 16:09:38 2015
2015-03-19T16:15:48+0000        ttyUSB1
2015-03-19T16:15:48+0000        ttyUSB1 Starting auditd v2.0 ... started.
2015-03-19T16:15:48+0000        ttyUSB1
```

```
2015-03-19T16:15:49+0000        ttyUSB1 Interface 0 configured for IPv6.
2015-03-19T16:15:49+0000        ttyUSB1
2015-03-19T16:15:49+0000        ttyUSB1 Interface 0 configured for IPv4.
2015-03-19T16:15:49+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1 add net default: gateway ::: Network is unreachable
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1 Starting USB driver...
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:50+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running DES POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 DES POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running Triple DES POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Triple DES POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running AES POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 AES POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running SHA1 POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 SHA1 POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running SHA2 POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 SHA2 POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running RandomGen POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 RandomGen POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running RSA POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 RSA POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running DSA POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 DSA POST Test Passed
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Running ECC POST Test
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 ECC POST Test Passed
```

```
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1 Audit on 19/3/2015 16:09:41 00100008
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:52+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 Keyper 9860-2  Serial Number H1411011
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 Memory Usage:
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 RAM (free/total)        197Mb/256Mb
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 Flash (free/total)      127Mb/128Mb
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1    black store          400b
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1    statistics           112b
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1    other                116b
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 RedStore (free/total)   109Kb/128Kb
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 Network Configuration:
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 IPv4: enabled
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 IPv6: enabled
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 MAC/IP address(es): 00:E0:06:C0:B3:2A / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b32a/64
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 HSM Port: 05000
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 Software Versions:
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 BBL 010 ABL 011 App 023
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 CPLD Version:
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 1.9
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 SCR Firmware Version:
2015-03-19T16:15:53+0000        ttyUSB1
```

```
2015-03-19T16:15:53+0000        ttyUSB1 OROS-R2.99-R1.20
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 HmcListener: Created IPv4 socket 10 on port 3000.
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 HmcListener: Created IPv6 socket 11 on port 3000.
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:15:53+0000        ttyUSB1 Audit on 19/3/2015 16:09:42 00100003
2015-03-19T16:15:53+0000        ttyUSB1
2015-03-19T16:17:07+0000        ttyUSB1 Audit on 19/3/2015 16:10:56 0020006b 00400000E962156D
2015-03-19T16:17:07+0000        ttyUSB1
2015-03-19T16:17:31+0000        ttyUSB1 Audit on 19/3/2015 16:11:20 0020006b 00400000E8E2156D
2015-03-19T16:17:31+0000        ttyUSB1
2015-03-19T16:19:00+0000        ttyUSB1 Audit on 19/3/2015 16:12:49 0020002e 00400000EA22156D
2015-03-19T16:19:00+0000        ttyUSB1
2015-03-19T16:19:06+0000        ttyUSB1 Audit on 19/3/2015 16:12:55 00200013 00400000EA22156D
2015-03-19T16:19:06+0000        ttyUSB1
2015-03-19T16:33:37+0000        ttyUSB1 Audit on 19/3/2015 16:27:26 00200023 15400006E4F3296E
2015-03-19T16:33:37+0000        ttyUSB1
2015-03-19T16:34:04+0000        ttyUSB1 Audit on 19/3/2015 16:27:51 00200023 00400000C662156D
2015-03-19T16:34:04+0000        ttyUSB1
2015-03-19T16:34:19+0000        ttyUSB1 Audit on 19/3/2015 16:28:08 0020001f
2015-03-19T16:34:19+0000        ttyUSB1
2015-03-19T16:34:22+0000        ttyUSB1 Shutting down daemons...
2015-03-19T16:34:22+0000        ttyUSB1
2015-03-19T16:34:22+0000        ttyUSB1 AuditBuffer rx'd [-1] (3)
2015-03-19T16:34:22+0000        ttyUSB1
2015-03-19T16:34:22+0000        ttyUSB1 shutting down audit service.
2015-03-19T16:34:22+0000        ttyUSB1
2015-03-19T16:34:22+0000        ttyUSB1 Terminated
2015-03-19T16:34:22+0000        ttyUSB1
2015-03-19T16:34:22+0000        ttyUSB1 HmcListener::accept(): No such process
2015-03-19T16:34:22+0000        ttyUSB1
2015-03-19T16:34:22+0000        ttyUSB1 Shutting down filesystems...
2015-03-19T16:34:22+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 H1411011 011397 BBL 010 : Factory Software Verification Key : CPLD version 1.9
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 BBL CRC32: 0x757574CA
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 Running applicationBootLoader at 0xEFDC0000
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 H1411011 011403 ABL 011 : Tamper Challenge Response Key
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 ABL CRC32: 0xE7E0FA6A
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
```

```
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 ####################################
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 ###     ABL tamper records       ###
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 ####################################
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 Current Tamper Counts (decimal 0-255):
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 ====================================
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 vextoosTamperCount:     0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 vintoosTamperCount:     10
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 vbboosTamperCount:      0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 maxstrtempTamperCount:  0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 minstrtempTamperCount:  0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 meshTamperCount:        0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 extampSMKTamperCount:   0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 extampIMKTamperCount:   0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 tempdiffTamperCount:    0
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 pfTamperCount:          10
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 restartTamperCount:     21
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 Current tamper bitmaps:
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 ======================
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 currentTamper bitmap:   0x0000 0b .... .... .... ....
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 lastTamper bitmap:      0x0080 0b .... .... 1... ....  (EXT_POWER_DOWN
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 Bitmapped Change Record (most recent first):
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1 ============================================
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:24+0000        ttyUSB1
2015-03-19T16:34:25+0000        ttyUSB1 Running cryptoApplication at 0xEBF00000
2015-03-19T16:34:25+0000        ttyUSB1
2015-03-19T16:34:25+0000        ttyUSB1 Jumping to startup @ 0x001037B4
2015-03-19T16:34:25+0000        ttyUSB1
```

```
2015-03-19T16:34:25+0000        ttyUSB1 Board is P2020RDB
2015-03-19T16:34:25+0000        ttyUSB1
2015-03-19T16:34:25+0000        ttyUSB1 board_smp_init: 2 cpu
2015-03-19T16:34:25+0000        ttyUSB1
2015-03-19T16:34:25+0000        ttyUSB1
2015-03-19T16:34:25+0000        ttyUSB1
2015-03-19T16:34:25+0000        ttyUSB1 Cpu_clk=1000000000, Sys_clk=100000000, CCB=500000000
2015-03-19T16:34:25+0000        ttyUSB1
2015-03-19T16:34:26+0000        ttyUSB1
2015-03-19T16:34:26+0000        ttyUSB1
2015-03-19T16:34:26+0000        ttyUSB1 System page at phys:0000b000 user:0000b000 kern:0000b000
2015-03-19T16:34:26+0000        ttyUSB1
2015-03-19T16:34:26+0000        ttyUSB1 Starting next program at v0015183c
2015-03-19T16:34:26+0000        ttyUSB1
2015-03-19T16:34:26+0000        ttyUSB1 Starting K-Series Kernel
2015-03-19T16:34:26+0000        ttyUSB1
2015-03-19T16:34:26+0000        ttyUSB1 Copyright AEP Networks Ltd. All Rights Reserved.
2015-03-19T16:34:26+0000        ttyUSB1
2015-03-19T16:34:26+0000        ttyUSB1 Thu Mar 19 16:28:16 2015
2015-03-19T16:34:26+0000        ttyUSB1
2015-03-19T16:34:27+0000        ttyUSB1 Starting auditd v2.0 ... started.
2015-03-19T16:34:27+0000        ttyUSB1
2015-03-19T16:34:27+0000        ttyUSB1 Interface 0 configured for IPv6.
2015-03-19T16:34:27+0000        ttyUSB1
2015-03-19T16:34:27+0000        ttyUSB1 Interface 0 configured for IPv4.
2015-03-19T16:34:27+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1 add net default: gateway ::: Network is unreachable
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1 route: writing to routing socket: Network is unreachable
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1 add net default: gateway 0.0.0.0: Network is unreachable
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1 Starting USB driver...
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1 9860 v2.3 Keyper Application - Nov  8 2013 13:17:33
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:28+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running DES POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 DES POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running Triple DES POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Triple DES POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running AES POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 AES POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running SHA1 POST Test
```

```
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 SHA1 POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running SHA2 POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 SHA2 POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running RandomGen POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 RandomGen POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running RSA POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 RSA POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running DSA POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 DSA POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 Running ECC POST Test
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1 ECC POST Test Passed
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:30+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 Keyper 9860-2  Serial Number H1411011
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 Memory Usage:
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 RAM (free/total)        197Mb/256Mb
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 Flash (free/total)      127Mb/128Mb
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1    black store          44b
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1    statistics           112b
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1    other                116b
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 RedStore (free/total)   109Kb/128Kb
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 Network Configuration:
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 IPv4: enabled
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 IPv6: enabled
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 MAC/IP address(es): 00:E0:06:C0:B3:2A / 192.168.0.2/24 , 2001::2e0:6ff:fec0:b32a/64
2015-03-19T16:34:31+0000        ttyUSB1
```

```
2015-03-19T16:34:31+0000        ttyUSB1 HSM Port: 05000
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 HSM Gateway(s): 0.0.0.0 ::
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 Software Versions:
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 BBL 010 ABL 011 App 023
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 CPLD Version:
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 1.9
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 SCR Firmware Version:
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 OROS-R2.99-R1.20
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1
2015-03-19T16:34:31+0000        ttyUSB1 Audit on 19/3/2015 16:28:20 00100001
2015-03-19T16:34:31+0000        ttyUSB1
```

Turns Off the Laptop

Step	Activity	Initials	Time

21.	CA unmounts HSMFD by executing
	`cd /tmp`
	then
	`umount /media/HSMFD`
	CA removes HSMFD.
		AD	1659

22.	After all print jobs are complete, CA a) Turns off the laptop by pressing the power switch b) Turns on the laptop by pressing the power switch c) Remove the O/S DVD from the drive d) Turns off the laptop again by pressing the power switch	AD	1700

Distribute HSMFDs

Step	Activity	Initials	Time
23.	Remaining HSMFDs are distributed to IW1 (2 for audit bundles, 1 for IKOS) to review, analyze and improve on procedures	AD	1700

Placement of HSMs to Safe #1

Step	Activity	Initials	Time
24.	CA, IW1, SSC1 open safe room and enter with equipment cart.	AD	1702
25.	SSC1 opens Safe #1 shielding combination from camera.	AD	1727
26.	IW1 provides a blank pre-printed safe log to the SSC1. SSC1 appends the new safe log then prints name, date, time, signature, and reason (i.e. "open safe") in safe log. IW1 initials this entry. **Note: If log entry is pre-printed, verify the entry, record time of completion and sign.**	AD	1728
27.	CA records placement of **HSM3** in next entry field of safe log with TEB # and HSM3 serial #, printed name, date, time, and signature. CA **CAREFULLY** places the HSM3 into Safe #1 and IW1 initials the entry. **HSM3: TEB# BB24646612 / serial # H1403032**	AD	1730
28.	CA records placement of **HSM4** in next entry field of safe log with TEB # and HSM4 serial #, printed name, date, time, and signature. CA **CAREFULLY** places the HSM4 into Safe #1 and IW1 initials the entry. **HSM4: TEB# BB 24646680 / serial # H1411011** ✓	AD	1731

Exception keys 1731

ICANN DNSSEC Script Exception

Abbreviations

TEB = Tamper Evident Bag
HSM = Hardware Security Module
FD = Flash Drive
CA = Ceremony Administrator
IW = Internal Witness
SA = System Administrator
SSC = Safe Security Controller

Instructions: Initial each step that has been completed below. Note time.

Note Exception Time

Step	Activity	Initials	Time
1.	IW1 notes date and time of key ceremony exception and signs here: 19/03/2015 1731	AD	1731
2.	IW1 Describes exception and action below.		

Act 3.
Between Step 28 & 29, missing step to put the keys for the HSMs inside the safe.

– End of DNSSEC Script Exception –

Close Equipment Safe #1

Step	Activity	Initials	Time
29.	SSC1 makes an entry including printed name, date, time, signature and notes "closing safe" in the safe log. IW1 initials the entry. **Note: If log entry is pre-printed, verify the entry, record time of completion and sign.**	AD	1733
30.	SSC1 places log back in safe and locks Safe #1 (spin dial at least two full revolutions each way, counter clock wise then clock wise). IW1 and CA verify safe is locked and door indicator light is green.	AD	1733
31.	IW1, CA, and SSC1 return to ceremony room with equipment cart closing the door behind them.	AD	1734

Participant Signing of IW1's Script

Step	Activity	Initials	Time
32.	One by one, all participants come to the front of the room, confirms printed name and date. **Then, the participant declares that this script is a true and accurate record of the ceremony by signing on IW1's script coversheet.** IW records the completion time once all participants have signed the coversheet. **Note: If entry is pre-printed, verify the entry and sign.**	AD	1735
33.	CA reviews IW1's script and signs it.	AD	1739

Filming Stops

Step	Activity	Initials	Time
34.	SA stops filming and makes 2 copies of film, one for on-site and one for off-site storage along with IW1 script copies made below.	AD	1740

Copying and Storing the Script

Step	Activity	Initials	Time
35.	IW1 makes at least 2 copies of his/her script: one for off-site audit bundle, one for IKOS and copies for other participants, as requested. Audit bundles each contain 1) Output of signer system – HSMFD 2) Copy of IW1's key ceremony script 3) Audio-visual recording 4) Logs from the Physical Access Control and Intrusion Detection System (Range is **11/20/2014 – 03/19/2015**) 5) The IW attestation (A.1 below) 6) SA attestation (A.2, A.3 below) All in a TEB labeled "**HSM Acceptance Testing**", dated and signed by **IW1 and CA**. Off-site audit bundle is delivered to off-site storage. **The CA holds the ultimate responsibility for finalizing the audit bundle.**	AD	1953

All remaining participants sign out of ceremony room log and leave.

Audit Bundle Checklist:

1. Output of Signer System (CA)
One electronic copy (physical flash drive) of the HSMFD in each audit bundle, each placed within a tamper-evident bag, labeled, dated and signed by the CA and the IW1

2. Key Ceremony Scripts (IW1)
Hard copies of the IW1's key ceremony scripts, including the IW's notes and the IW's attestation. See Appendix A.1.

3. Audio-visual recordings from the key ceremony (SA)
One set for the original audit bundle and the other for duplicate.

4. Logs from the Physical Access Control and Intrusion Detection System (SA)
One electronic copy (physical flash drive) of the firewall configuration, the screenshots from the PAC-IDS configuration review, the list of the enrolled users, the event log file and the configuration audit log file in each audit bundle, each placed in a tamper-evident bag, labeled, dated and signed by the SA and the IW.

IW confirms the contents of the logs before placing the logs in the audit bundle.

5. Configuration review of the Physical Access Control and Intrusion Detection System (SA)
SA's attestation and hard copies of the screen shots and configuration audit log from the review process. See Appendix A.2.

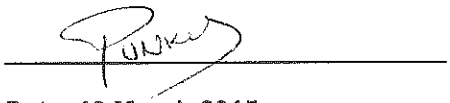
6. Configuration review of the Firewall System (SA)
SA's attestation and hard copies of the firewall configuration from the review process. See Appendix A.3. Make sure the scrambled passwords are eliminated from the configuration before publishing it.

7. Other items
If applicable.

A.1 Key Ceremony Script (by IW)

I hereby attest that the Key Ceremony was conducted in accordance with this script and any exceptions that may have occurred were accurately and properly documented.

Alberto Duero



Date: 19 March 2015

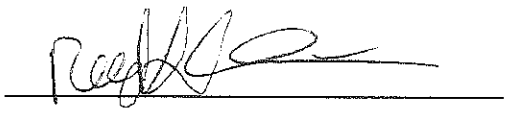
A.2 Access Control System Configuration Review (by SA)

I have reviewed the access control system configuration, the configuration audit log and the assigned authorizations from the other KMF and not found any discrepancies or anything else out of the ordinary.

Enclosed are the configuration audit log, the list of assigned authorizations and the screenshots of the roles configurations.

Enclosed is also an electronic copy of the event log from the access control system ranging from the last log extraction on **20 November 2014 00:00 UTC** to now.

Reed Quinn



Date: 19 March 2015

```
## Last commit: 2015-03-20 05:33:11 UTC by reed
version 12.1X44-D35.5;
system {
    host-name srx;
    domain-name ksk.cjr.dns.icann.org;
    location {
        country-code US;
        postal-code 22701;
        building Terremark-Admin;
        floor 1;
        rack 1;
    }
    ports {
        console {
            log-out-on-disconnect;
            type vt100;
        }
    }
    root-authentication {
        encrypted-password “##############################”; ##
SECRET-DATA
    }
    name-server {
        8.8.8.8;
        8.8.4.4;
    }
    login {
        user cbarthold {
            full-name "Connor A. Barthold";
            uid 2007;
            class super-user;
            authentication {
                encrypted-password “##################################”;
## SECRET-DATA
            }
        }
        user reed {
            full-name "Reed Quinn";
            uid 2003;
            class super-user;
            authentication {
                encrypted-password “##################################”;
## SECRET-DATA
            }
        }
    }
    services {
        ssh {
            root-login allow;
        }
```

```
    }
    syslog {
        archive size 100k files 3;
        user * {
            any emergency;
        }
        file messages {
            any critical;
            authorization info;
        }
        file interactive-commands {
            interactive-commands error;
        }
    }
    max-configurations-on-flash 5;
    max-configuration-rollbacks 20;
    license {
        autoupdate {
            url https://ae1.juniper.net/junos/key_retrieval;
        }
    }
    processes {
        idp-policy disable;
    }
    ntp {
        server 129.6.15.28;
        server 129.6.15.29;
        source-address 10.4.29.1;
    }
}
interfaces {
    interface-range interfaces-trust {
        member ge-0/0/1;
        member fe-0/0/2;
        member fe-0/0/3;
        member fe-0/0/4;
        member fe-0/0/5;
        member fe-0/0/6;
        member ge-0/0/0;
        unit 0 {
            family ethernet-switching {
                vlan {
                    members vlan-trust;
                }
            }
        }
    }
    fe-0/0/7 {
        unit 0 {
            family inet {
```

```
                address 10.100.1.1/24;
            }
        }
    }
    ge-1/0/0 {
        unit 0 {
            family inet {
                address 152.194.1.148/28;
            }
        }
    }
    vlan {
        unit 0 {
            family inet {
                address 10.4.29.1/24;
            }
        }
    }
}
routing-options {
    static {
        route 0.0.0.0/0 next-hop 152.194.1.145;
    }
}
security {
    nat {
        source {
            rule-set trust-to-untrust {
                from zone trust;
                to zone untrust;
                rule source-nat-rule {
                    match {
                        source-address 0.0.0.0/0;
                    }
                    then {
                        source-nat {
                            interface;
                        }
                    }
                }
            }
            rule-set media-to-untrust {
                from zone media;
                to zone untrust;
                rule source-nat-rule-1 {
                    match {
                        source-address 0.0.0.0/0;
                    }
                    then {
                        source-nat {
```

```
                        interface;
                    }
                }
            }
        }
    }
    policies {
        from-zone trust to-zone untrust {
            policy trust-to-untrust {
                match {
                    source-address localnet;
                    destination-address [ icanndns simplexgrinnell
simplexgrinnell2 simplex simplex2 icann google ];
                    application any;
                }
                then {
                    permit;
                    log {
                        session-close;
                    }
                }
            }
        }
        from-zone media to-zone untrust {
            policy media-to-untrust {
                match {
                    source-address any;
                    destination-address any;
                    application any;
                }
                then {
                    permit;
                    log {
                        session-close;
                    }
                }
            }
        }
    }
    zones {
        security-zone trust {
            address-book {
                address localnet 10.4.29.0/24;
            }
            host-inbound-traffic {
                system-services {
                    all;
                }
                protocols {
```

```
                    all;
                }
            }
            interfaces {
                vlan.0;
            }
        }
        security-zone untrust {
            address-book {
                address icanndns 199.4.28.0/22;
                address simplexgrinnell 12.30.47.110/32;
                address simplexgrinnell2 205.145.182.128/32;
                address simplex 216.224.218.31/32;
                address simplex2 216.224.219.32/32;
                address icann 192.0.32.0/20;
                address google 8.8.8.8/32;
            }
            interfaces {
                ge-1/0/0.0 {
                    host-inbound-traffic {
                        system-services {
                            ping;
                        }
                    }
                }
            }
        }
        security-zone media {
            interfaces {
                fe-0/0/7.0;
            }
        }
    }
}
applications {
    application sg {
        protocol udp;
        source-port 3060;
        destination-port 3061;
    }
    application sg2 {
        protocol udp;
        source-port 3065;
        destination-port 3061;
    }
    application simplexout {
        protocol udp;
        source-port 3060;
        destination-port 18031;
    }
```

```
    application simplexout2 {
        protocol udp;
        source-port 3065;
        destination-port 18031;
    }
}
vlans {
    vlan-trust {
        vlan-id 3;
        l3-interface vlan.0;
    }
}
```