



DNSSEC Key Ceremony #26 Friday, January 27, 2023

Sign In to Facility

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 1 | FO started the video and separate audio recording. Livestream of the security cameras and signing devices is started. FO confirms all participants are familiar with site procedures. | 18:23 | MB |
| 2 | Each participant has provided a negative Covid test. W verifies that each attendant shows a negative Covid test no older than 12 hours. | 18:24 | MB |

Enter the Key Management Facility

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 3 | Each participant is issued an identification vest. W verifies the identity of each participant by examining a government-issued photo identification. W records the type and number of each piece of identification on the Participant Sheet. Participant signs their record. | 18:25 | MB |

Ground Rules

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 4 | <p>CA previews ground rules and break procedures with participants.</p> <ul style="list-style-type: none"> - Ceremony participants follow the script step by step. - CA reads each step aloud prior to its performance. Italicized text is informational only and is not read aloud. - Upon completion of each step, CA announces the time of completion. W records the completion time and initials their copy of the script. - Any participant who notices a problem or believes that an error has occurred should interrupt the ceremony immediately. Participants agree upon a resolution before proceeding. - W records any significant discrepancies or deviations from the script on the provided DNSSEC Key Ceremony Script Exception Form. - CA and anyone else handling items removed from a TEB or items on the work surface should have rolled-up sleeves or, preferably, short sleeves. - Questions and suggestions for improvement are welcome at any time, are incorporated into the record, and contribute to the quality of this and future key ceremonies. | 18:26 | MB |

Introduce Participants

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 5 | CA introduces attendees and identifies those that are remote. | 18:28 | MB |

Verify Time and Date

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 6 | <p>W reads aloud and records the date (Year-Month-Day) and time using the clock visible to all. Participants verify that the time is correct.</p> <p>Date: 2023-1-27</p> <p>Time: 18:28</p> | 18:28 | MB |

Verify Power

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 7 | <p>CA verifies that the UPS is connected to and receiving power from the electric grid and that it is charged.</p> <p>CA verifies that both the HSM and signing computer power cables are connected to the UPS.</p> | 18:30 | MB |

Remove Equipment from Safe

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 8 | <p>SC opens safe and records this action as an entry on the safe's log sheet.</p> <p>SC collects the following items from the safe:</p> <ul style="list-style-type: none"> - HSM - Signing Computer <p>SC reads out the HSM TEB number. W confirms that it matches that last used to seal this HSM.</p> <p>HSM TEB# BB69600208</p> <p>SC reads out the signing computer TEB number. W confirms that it matches that last used to seal this Signing Computer.</p> <p>Signing Computer TEB# BB71705219</p> <p>SC provides sealed HSM and signing computer to the CA.</p> <p>SC records the removal of the HSM and Signing Computer in the safe's log sheet.</p> | 18:34 | MB |
| 9 | <p>CA inspects the TEBs for evidence of tampering, removes and discards the TEBs.</p> <p>CA reads out the HSM serial number. W confirms that it matches that recorded below.</p> <p>HSM Serial# H1411035</p> | 18:39 | MB |

Collect OP Cards

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 10 | <p>For each of the COs listed in the following table:</p> <p>CA collects the CO's Card Case, reads out and compares TEB number with that recorded below, and inspects for evidence of tampering.</p> <p>CA retrieves the OP card from the Card Case, reads out and compares TEB number with that recorded below, and inspects for evidence of tampering.</p> <p>CA retrieves the OP card and places it in plain view on the work surface.</p> <p><i>Reproductions of the key ceremony script are available at https://www.pch.net.</i></p> | 18:50 | MB |

Smart Card Reference

CO1 Steve FELDMAN

| Item | TEB# | Reference |
|-----------|------------|-----------|
| Card Case | AE26992054 | KC25 |
| OP 1 of 7 | RA02670203 | KC25 |

CO2 Michael SINATRA

| Item | TEB# | Reference |
|-----------|------------|-----------|
| Card Case | AE26992032 | KC23 |
| OP 2 of 7 | RA02670360 | KC23 |

CO4 Eric ALLMAN

| Item | TEB# | Reference |
|-----------|------------|-----------|
| Card Case | AE26992050 | KC25 |
| OP 4 of 7 | RA02670261 | KC25 |

Set Up Signing Computer

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 11 | CA connects the display to the signing computer. CA connects the keyboard to the signing computer. CA connects the signing computer to power and waits for the boot process to complete. | 18:53 | MB |
| 12 | CA initiates a login in tty1 using login pi and password raspberry. CA sets the font size for easy readability by executing: <pre>setfont /usr/share/consolefonts/Uni3-Terminus32x16.psf.gz</pre> CA initiates a root login by executing: <pre>sudo -i</pre> | 18:55 | MB |
| 13 | CA sets time to match the wall clock: <pre>date mmddHHMMYYYY</pre> Verify: <i>Repeat as needed.</i> | 18:57 | MB |
| 14 | CA connects a blank flash drive labeled "HSMFD" to the signing computer. CA mounts the flash drive by executing: <pre>mkdir /tmp/HSMFD</pre> <pre>mount -o noexec /dev/sdal /tmp/HSMFD</pre> | 18:59 | MB |

Start Logging Terminal Session

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 15 | CA changes directory to the HSMFD and starts capture of terminal output to a file: <pre>cd /tmp/HSMFD</pre> <pre>script -t script-20230127.log 2>script-20230127.timing</pre> | 19:00 | MB |

Prepare Environment

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 16 | <p>CA connects the flash drive labeled "SCRIPTS" to the signing computer.</p> <p>CA mounts the flash drive by executing:</p> <pre>mkdir /tmp/SCRIPTS mount -o ro,noexec /dev/sdb1 /tmp/SCRIPTS</pre> <p>CA lists the contents of the SCRIPTS flash drive for the record.</p> <pre>ls /tmp/SCRIPTS</pre> | 19:02 | MB |
| 17 | <p>CA copies the compressed archive of the previous key ceremony from SCRIPTS into the current directory on the HSMFD.</p> <pre>cp -v /tmp/SCRIPTS/HSMFD-20220317.tar.gz . sha256sum HSMFD-20220317.tar.gz perl -naE 'say uc for unpack("(A4)*", \$F[0])'</pre> <p>Verify that the checksum is:</p> <pre>CAE0 5C63 9F69 56D3 DF9F 7B2E 0C57 243A BD36 CB42 86D CBE9 2EF3 F3DA 1F88 D902</pre> <p>Un-tar the archive:</p> <pre>tar -xzvof HSMFD-20220317.tar.gz</pre> | 19:16 | MB |
| 18 | <p>CA copies the compressed input files from SCRIPTS into the current directory on the HSMFD.</p> <pre>cp -v /tmp/SCRIPTS/scripts-20230127.tar.gz . tar -xzvof scripts-20230127.tar.gz . bootstrap</pre> | 19:17 | MB |

Start Logging HSM Output

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 19 | <p>CA connects the signing computer to the serial port of the HSM.</p> <p>CA switches to tty2 by pressing Ctrl+Alt+F2 and initiates a login using login pi and password raspberry.</p> <p>CA sets the font size for easy readability by executing:</p> <pre>setfont /usr/share/consolefonts/Uni3-Terminus32x16.psf.gz</pre> <p>CA initiates a root login by executing:</p> <pre>sudo -i</pre> <p>CA starts logging HSM serial output by executing:</p> <pre>cd /tmp/HSMFD stty -F /dev/ttyUSB0 115200 /tmp/kc/bin/ttyaudit /dev/ttyUSB0</pre> <p><i>Do not unplug the USB-serial adaptor from the signing computer until instructed, as this would cause logging to stop.</i></p> | 19:22 | MB |

Connect Offline HSM (KSK-HSM-02-BRK)

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 20 | <p>CA connects the HSM to power and toggles HSM power switch, if required.</p> <p><i>Status information appears on the display and the "Ready" LED on the HSM blinks. After completing its self-test the HSM displays the text "Set Online," indicating that the HSM is in the initialized state, and the "Ready" LED is off.</i></p> | 19:24 | MB |

Activate HSM

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 21 | <p>CA brings HSM online using the "Set Online" menu item. When prompted, CA inserts one of the OP cards and enters the corresponding card PIN.</p> <p><i>All cards have PIN 11223344.</i></p> <p>CA repeats this process using two open OP cards. When complete the HSM "Ready" LED illuminates.</p> <p><i>The HSM always refers to cards 1, 2, and 3.</i></p> | 19:30 | MB |
| 22 | <p>CA switches to tty1 by pressing Ctrl+Alt+F1.</p> <p>CA connects the signing computer to the HSM's LAN port using an Ethernet cable.</p> <p>CA initiates communication by executing:</p> <pre>set-hsm-env KSK-HSM-02-BRK</pre> | 19:33 | MB |
| 23 | <p>CA edits the token store files from previous ceremony to remove all but the DNSSEC backup key (line 1) that might have been left behind by delete timeout in HSM library.</p> <pre>KLP=keyperlibpath/KSK-HSM-02-BRK</pre> <pre>head -n 1 \$KLP/ZSKSlotDB.db > \$KLP/ZSKSlotDB.db.new</pre> <pre>mv -v \$KLP/ZSKSlotDB.db.new \$KLP/ZSKSlotDB.db</pre> <pre>head -n 1 \$KLP/KSKSlotDB.db > \$KLP/KSKSlotDB.db.new</pre> <pre>mv -v \$KLP/KSKSlotDB.db.new \$KLP/KSKSlotDB.db</pre> | 19:36 | MB |

Start Generating Keys and Keybundles

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 24 | <p>CA copies the encrypted backups of the KSKs and ZSKs by executing:</p> <pre>cd /tmp/kc makeallhsmfiles</pre> <p>CA initiates key and signature generation by executing:</p> <pre>key-and-sig-gen</pre> <p><i>This will take a long time generating new keys and keybundles (KSK signed DNSKEY RRsets). KSKs and ZSKs will automatically be backed up in encrypted form and deleted from HSM as each zone is completed.</i></p> | 19:38 | MB |

Repackage and Redistribute OP Cards

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 25 | <p>For each of the COs listed in the following table:</p> <p>CA places the respective OP card in its own new TEB reading the TEB number aloud. W confirms the TEB matches that recorded in the Smart Card Sign-Out Sheet below.</p> <p>CA holds the TEB to one of the cameras for the visual record.</p> <p>CA places the sealed cards into the respective Card Case, and places the Card Case in its own new TEB reading the TEB number aloud. W confirms the TEB matches that recorded on the Smart Card Sign-Out Sheet below.</p> <p>CA calls the CO to retrieve their sealed Card Case. The CO verifies and signs W's copy of the Smart Card Sign-Out Sheet. W records the time and initials the CO's entries on the Smart Card Sign-Out Sheet.</p> | 19:58 | MB |

Smart Card Sign-Out Sheet

CO1 Steve FELDMAN

| TEB# | Containing | Signature | Date | Time UTC | W |
|------------|------------|------------|---------|----------|----|
| RA02670277 | OP 1 of 7 | [Redacted] | 1/27/23 | | MB |
| AE26992048 | Card Case | [Redacted] | 1/27/23 | | MB |

CO2 Michael SINATRA

| TEB# | Containing | Signature | Date | Time UTC | W |
|------------|------------|------------|---------|----------|----|
| RA02670275 | OP 2 of 7 | [Redacted] | 1/27/23 | | MB |
| AE26992040 | Card Case | [Redacted] | 1/27/23 | | MB |

CO4 Eric ALLMAN

| TEB# | Containing | Signature | Date | Time UTC | W |
|------------|------------|------------|---------|----------|----|
| RA02670273 | OP 4 of 7 | [Redacted] | 1/27/23 | | MB |
| AE26992044 | Card Case | [Redacted] | 1/27/23 | | MB |

Intermission

| Step | Activity | Time (UTC) | Initial |
|------|---|---------------------------|---------|
| 26 | All participants leave the vault and record an entry on the DNSSEC Key Ceremony Entry/Exit Log. <i>This break is to accommodate the long-running script.</i> | 20:00 19:58 | MB |

Reenter Facility

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 27 | Participants re-enter the vault and record an entry on the DNSSEC Key Ceremony Entry/Exit Log. | 22:33 | MB |

Pack and Store Keys and Keybundles

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 28 | CA confirms the completion of the key generation script. | 22:39 | MB |
| 29 | CA edits the token store files to remove all but the DNSSEC backup key (line 1) that might have been left behind by delete timeout in HSM library. <pre>KLP=/tmp/HSMFD/keyperlibpath/KSK-HSM-02-BRK head -n 1 \$KLP/ZSKSlotDB.db > \$KLP/ZSKSlotDB.db.new mv -v \$KLP/ZSKSlotDB.db.new > \$KLP/ZSKSlotDB.db head -n 1 \$KLP/KSKSlotDB.db > \$KLP/KSKSlotDB.db.new mv -v \$KLP/KSKSlotDB.db.new > \$KLP/KSKSlotDB.db</pre> | 22:42 | MB |
| 30 | CA generates the archive destined for the signers by executing: <pre>pack-today-kb</pre> CA archives all results including wrapped KSKs for future use by executing: <pre>pack-today-session</pre> CA creates a snapshot of any changes to database files by executing: <pre>cd /tmp/HSMFD pack-snapshot-db KSK-HSM-02-BRK</pre> | 22:44 | MB |
| 31 | CA creates checksums of all files on the HSMFD by executing: <pre>find . -type f -print0 xargs -0 -n 50 sha256sum</pre> | 22:45 | MB |

Return HSM to a TEB

| Step | Activity | Time (UTC) | Initial |
|------|---|--------------|-----------|
| 32 | <p>CA switches to tty2 by pressing Ctrl+Alt+F2.</p> <p>CA presses the HSM's RESTART button and waits for self-test to complete.</p> <p>CA confirms the HSM is offline by checking the Ready LED is off.</p> <p>CA disconnects HSM from power and signing computer (serial and Ethernet), places it into a new TEB, and seals.</p> <p>CA shows sealed TEB to participants.</p> <p>CA reads out the HSM serial number. W confirms that it matches that recorded below:</p> <p>HSM Serial#: H1411035</p> <p>CA reads out the TEB number. W confirms that it matches that recorded below:</p> <p>HSM TEB#: BB69600211</p> | <p>22:52</p> | <p>MB</p> |

Stop Recording Serial Port Activity

| Step | Activity | Time (UTC) | Initial |
|------|---|--------------|-----------|
| 33 | <p>CA terminates HSM serial output capture by disconnecting the USB serial adaptor from the signing computer.</p> <p>CA then exits serial output terminal by executing:</p> <p><code>exit</code></p> <p><code>exit</code></p> <p>CA switches to tty1 by pressing Ctrl+Alt+F1.</p> | <p>22:54</p> | <p>MB</p> |

Stop Logging and Create Archive

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 34 | CA displays contents of the HSMFD by executing: <pre>ls -ltr</pre> CA stops logging terminal output by executing: <pre>exit</pre> CA creates a single archive by executing: <pre>/tmp/kc/bin/pack-hsmfd</pre> | 22:56 | MB |
| 35 | CA calculates the SHA-256 checksum of the archive by executing: <pre>sha256sum HSMFD-20230127.tar.gz perl -naE 'say uc for unpack("(A4)*", \$F[0])'</pre> CA reads the hash of the checksum aloud. W records the sixty-four digit hash: <u>C23B EBAB BFD1 FEEA</u> <u>0812 FC63 1020 E579</u> <u>3BFA AD3D 0B92 DB7E</u> <u>C851 E976 1C7F 02F5</u> W reads back the hash aloud. | 23:02 | MB |

Backup HSM Flash Drive Contents for On-Site Bundle

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 36 | <p>CA plugs a blank flash drive labeled "HSMFD" into the signing computer.</p> <p>CA mounts the flash drive by executing:</p> <pre>mkdir /tmp/HSMFD_ mount -o noexec /dev/sdcl /tmp/HSMFD_</pre> <p>CA copies the contents of the HSMFD to the blank drive for backup by executing:</p> <pre>cp -a * /tmp/HSMFD_</pre> | 23:05 | MB |
| 37 | <p>CA unmounts the new flash drive by executing:</p> <pre>umount /tmp/HSMFD_</pre> <p>CA removes the flash drive from the signing computer, places the flash drive in a new TEB and seals it.</p> <p>CA shows sealed TEB to participants.</p> <p>CA reads out the TEB number. W confirms that it matches that recorded below:</p> <p>TEB#: RA02670279</p> <p><i>This copy will be stored with the on-site audit bundle.</i></p> | 23:10 | MB |

Backup HSM Flash Drive Contents for Off-Site Bundle

| Step | Activity | Time (UTC) | Initial |
|------|--|--------------|-----------|
| 38 | <p>CA plugs a blank flash drive labeled "HSMFD" into the signing computer.</p> <p>CA mounts the flash drive by executing:</p> <pre>mount -o noexec /dev/sdc1 /tmp/HSMFD_</pre> <p>CA copies the contents of the HSMFD to the blank drive for backup by executing:</p> <pre>cp -a * /tmp/HSMFD_</pre> | <p>23:13</p> | <p>MB</p> |
| 39 | <p>CA unmounts the new flash drive by executing:</p> <pre>umount /tmp/HSMFD_</pre> <p>CA removes the flash drive from the signing computer, places the flash drive in a new TEB and seals it.</p> <p>CA shows sealed TEB to participants.</p> <p>CA reads out the TEB number. W confirms that it matches that recorded below:</p> <p>TEB#: RA02670287</p> <p><i>This copy will be stored with the off-site audit bundle.</i></p> | <p>23:15</p> | <p>MB</p> |

Remove Flash Drives

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 40 | <p>CA unmounts SCRIPTS by executing:</p> <pre>umount /tmp/SCRIPTS</pre> <p>CA removes the flash drive labelled SCRIPTS.</p> <p><i>This flash drive is retained by the CA.</i></p> <p>CA unmounts HSMFD by executing:</p> <pre>cd /tmp</pre> <pre>umount /tmp/HSMFD</pre> <p>CA removes the flash drive labelled HSMFD.</p> <p><i>This copy is used for operations and the published archive.</i></p> | 23:17 | MB |

Return Signing Computer to a TEB

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 41 | <p>CA disconnects power, keyboard, and display cables from the signing computer. CA and W take note of anything else that needs to be removed from the signing computer.</p> <p>CA places the signing computer in new TEB and seals it.</p> <p>CA shows sealed TEB to participants.</p> <p>CA reads out the TEB number. W confirms that it matches that recorded below:</p> <p>Signing Computer TEB#: BB71705218</p> | 23:21 | MB |

Secure Equipment

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 42 | <p>SC returns items to the safe.</p> <ul style="list-style-type: none"> - KSK-HSM-02-BRK HSM - Signing Computer - HSMFD 1 above <p>SC records return of each item on the safe log with TEB number, name of item, date, time, and signature. A second participant initials each entry.</p> <p><i>Power supplies and cables are not stored the safe and will be stored separately.</i></p> <p>SC records a closing action on the safe's log sheet and returns the log sheet to the safe. SC closes the safe. W verifies it is locked.</p> | 23:25 | MB |

Sign-Out

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 43 | All participants leave the Key Management Facility and record an entry on the DNSSEC Key Ceremony Entry/Exit Log. | | MB |

Stop Audio-Visual Recording

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 44 | <p>FO stops audio and video recording.</p> <p>FO stops both livestreams.</p> | | |

Sign Out of Facility

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 45 | <p>Participants return identification vests to FO.</p> <p>Participants are now free to depart. FO logs their exit times.</p> | | |

Attestations

| Step | Activity | Time (UTC) | Initial |
|------|--|------------|---------|
| 46 | SC completes Access Control System Attestation. CA completes Key Ceremony Script Attestation. | | |

Copy and Store the Script

| Step | Activity | Time (UTC) | Initial |
|------|---|------------|---------|
| 47 | <p>FO makes at least three colour copies of the W's script: one for the on-site audit bundle, one for off-site audit bundle, one for the W, and copies for other participants as requested. FO delivers the original to the SC.</p> <p>The two audit bundles each containing:</p> <ul style="list-style-type: none"> - output of signer system - HSMFD - copy of W's key ceremony script - audio-visual recording - logs from the Facility Physical Access Control - SC attestation (Appendix A) - CA attestation (Appendix B) <p>FO places each bundle in a TEB labeled "Key Ceremony 2023-01-27". CA dates and signs each bundle.</p> <p><i>One bundle will be stored by the SC. The second bundle will be kept securely offsite.</i></p> | | |

Access Control System Attestation

I have reviewed the physical access control system and not found any discrepancies or anything else out of the ordinary. Attached is the audited physical access log.

Printed Name: CSILLAG TAMAS

Signature: 

Date: 2023-01-27

SEE NOTARY'S CERTIFICATE

Key Ceremony Script Attestation

I hereby attest that the Key Ceremony was conducted in accordance with this script and that any exceptions which may have occurred were accurately and properly documented on the attached DNSSEC Key Ceremony Script Exception Forms.

Printed Name: ROBERT ARASMITA

Signature: 

Date: 1/27/23

SEE NOTARY'S CERTIFICATE

Participant Sheet

| Role | Name | Citizenship | Form of Identification | Identification Number | Signature |
|------|-------------------|-------------|------------------------|-----------------------|-----------|
| O | Mimi RAUSCHENDORF | | | | |
| CA1 | Tamas CSILLAG | | | | |
| W | Mary Shampa BAPI | | | | |
| CO1 | Steve FELDMAN | | | | |
| CO2 | Michael SINATRA | | | | |
| CO4 | Eric ALLMAN | | | | |
| SC2 | Bob ARASMITH | | | | |

DNSSEC Key Ceremony Entry/Exit Log

| Name | Time UTC | In/Out | Initial | Witness |
|----------------|----------|--------|---------|---------|
| Eric Allman | 18:09 | In/Out | EA | MB |
| R. Adams | | In/Out | | MB |
| Wilby Tom | 18:12 | In/Out | | MB |
| [Signature] | 18:15 | In/Out | | MB |
| Mary Davis | 18:15 | In/Out | M | MB |
| Mary Davis | 20:02 | In/Out | MD | MB |
| Eric P. Allman | 20:03 | In/Out | EA | MB |
| Wilby Tom | 20:03 | In/Out | W | MB |
| R. Adams | 20:03 | In/Out | RA | MB |
| [Signature] | 20:04 | In/Out | | MB |
| R. Adams | 22:29 | In/Out | RA | MB |
| Wilby Tom | 22:30 | In/Out | | MB |
| Eric P. Allman | 22:30 | In/Out | | MB |
| Mary | 22:31 | In/Out | | MB |
| Mary Davis | 22:32 | In/Out | MD | MB |
| Mary Davis | 23:28 | In/Out | MD | MB |
| R. Adams | 23:20 | In/Out | RA | MB |
| Eric Allman | 23:28 | In/Out | EA | MB |
| Wilby Tom | 23:30 | In/Out | W | MB |
| Mary Davis | 23:30 | In/Out | | MB |

Notary Acknowledgment

The Notary Acknowledgment is provided on the following page(s).

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A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)

COUNTY OF ALAMEDA

On Jan 27, 2023 before me, MARY SHAMPA BAPI NOTARY PUBLIC
DATE INSERT NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared, ROBERT A. RASMITH

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Mary Shampa Bapi
NOTARY PUBLIC SIGNATURE (SEAL)



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STATE OF CALIFORNIA)

COUNTY OF ALAMEDA)

On JAN 27, 2023 before me, MARY SHAMPA BAPI NOTARY PUBLIC
DATE INSERT NAME, TITLE OF OFFICER - E.G., "JANE DOE, NOTARY PUBLIC"

personally appeared, TAMAS CSILLAG

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Mary Shampa Bapi
NOTARY PUBLIC SIGNATURE (SEAL)



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EXCEPTION STEP 29 KC 26

1/27/23 22:36

The two "mv" commands have a redirect where it should not be.

This step is equivalent to STEP 23.

[REDACTED] → SCZ
[REDACTED] CAN

Notary Acknowledgment

The Notary Acknowledgment is provided on the following page(s).

EXCEPTION STEP 17 KC26

01/27/23 19:12

Checksum included the letter "I"
where there should have been a "1",

AN OBVIOUS TYPO SINCE "I" IS NOT
A HEXADECIMAL CHARACTER.

I matched the correct ~~of~~ value

Continued.

[REDACTED] SCZ

[REDACTED] CA1

Facility Sign In Sheet

Facility supplied entry and exit records are provided on the following page(s).