keyup Documentation

Release 1.3.1

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README

CHAPTER 1

Purpose

keyup automates IAM user access key rotation from the cli by allowing ad hoc or scheduled renewal of your access key credentials via the Amazon API's.

keyup:

- is a safe and reliable way to rotate (renew) access keys to Amazon Web Services as frequently as you wish, with minimal effort and risk.
- requires only the profile name of your IAM user in your local awscli configuration

Features:

- access key rotation via the Amazon APIs
- key rotation includes:
  - creation of new access keys
  - automated installation in the local awscli configuration
  - deprecated key deletion
- automated, unattended key rotation
- rotate keys as frequently as you wish (daily, for example)

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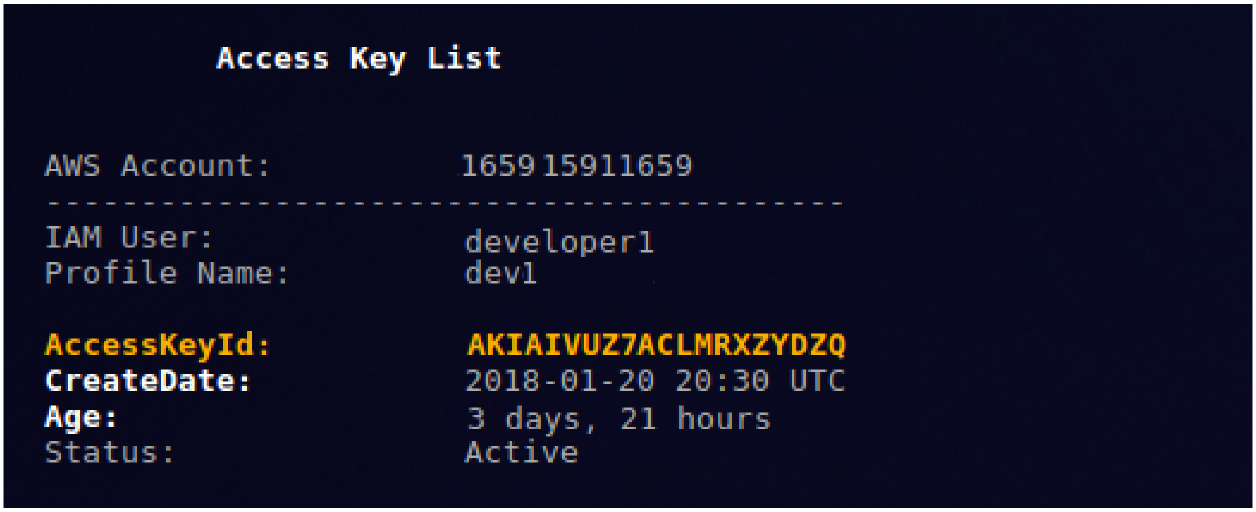

```
          Access Key List


AWS Account:            165915911659
------------------------------------------
IAM User:               developer1
Profile Name:           dev1

AccessKeyId:            AKIAIVUZ7ACLMRXZYDZQ
CreateDate:             2018-01-20 20:30 UTC
Age:                    3 days, 21 hours
Status:                 Active
```

CHAPTER 2

Getting Started

Before starting, please take a moment to read the following:

- Frequently Asked Questions (FAQ)
- Use Cases

Other Resources:

- Source Code: keyup bitbucket repository
- Amazon Secure Token Service (STS) Documentation
- Amazon Web Services' Command Line Interface (awscli) Documentation
- **keyup** Open Source License Agreement

Current Release:

- Ensure you are running the most current release. See the most *Current Release*.

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CHAPTER 3

Documentation

Online:

- Complete html documentation available at http://keyup.readthedocs.io.

Download: Available via download in the formats below

- pdf format
- Amazon Kindle (epub) format

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CHAPTER 4

Parameters & Options

Display help menu to see available options and functionality.

```
$ keyup --help
```

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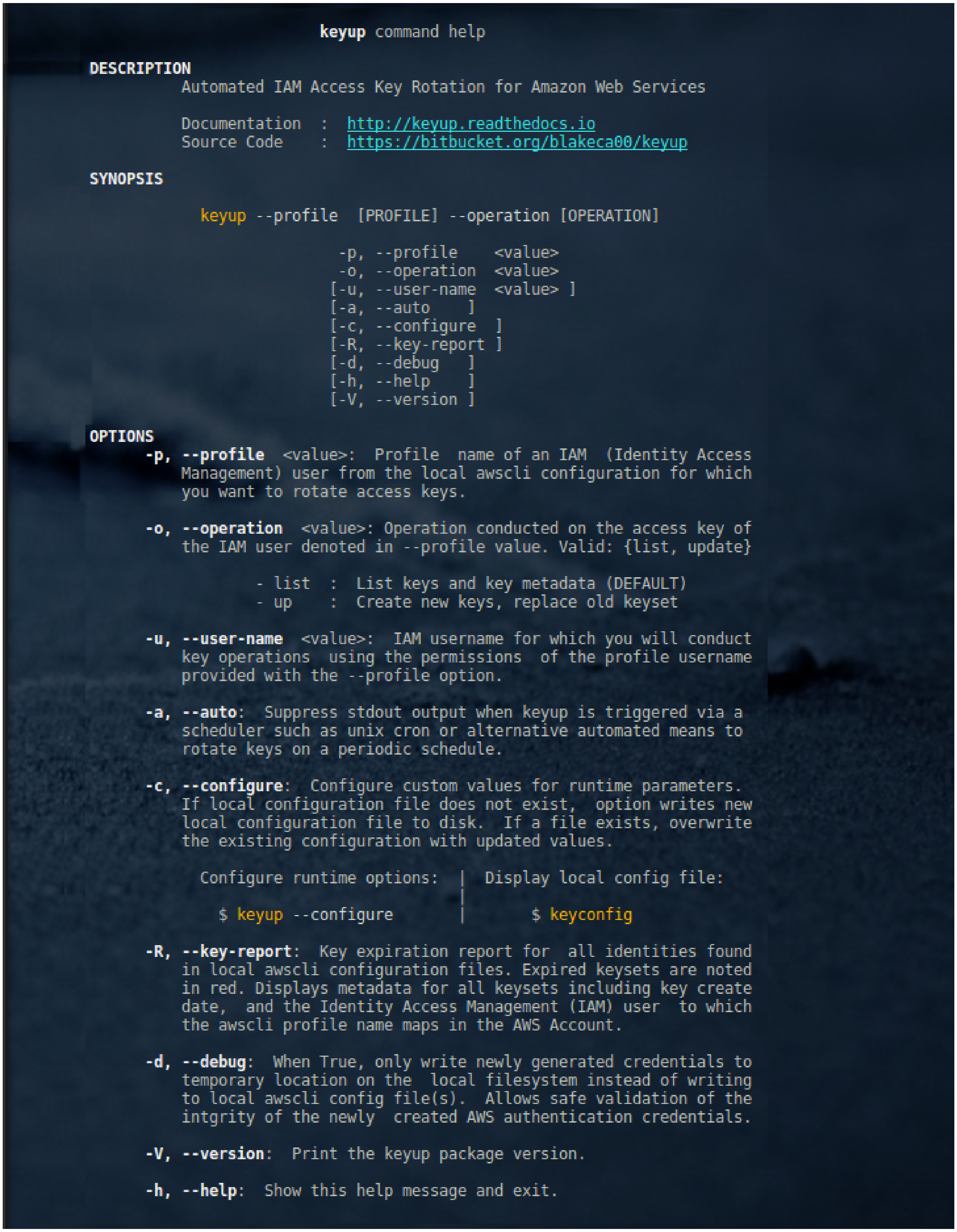

```
                          keyup command help

DESCRIPTION
          Automated IAM Access Key Rotation for Amazon Web Services

          Documentation  :  http://keyup.readthedocs.io
          Source Code    :  https://bitbucket.org/blakeca00/keyup

SYNOPSIS

            keyup --profile  [PROFILE] --operation [OPERATION]

                           -p, --profile    <value>
                           -o, --operation  <value>
                          [-u, --user-name  <value> ]
                          [-a, --auto     ]
                          [-c, --configure  ]
                          [-R, --key-report ]
                          [-d, --debug    ]
                          [-h, --help     ]
                          [-V, --version ]

OPTIONS
      -p, --profile  <value>:  Profile  name of an IAM  (Identity Access
          Management) user from the local awscli configuration for which
          you want to rotate access keys.

      -o, --operation  <value>: Operation conducted on the access key of
          the IAM user denoted in --profile value. Valid: {list, update}

                  - list  :  List keys and key metadata (DEFAULT)
                  - up    :  Create new keys, replace old keyset

      -u, --user-name  <value>:  IAM username for which you will conduct
          key operations  using the permissions  of the profile username
          provided with the --profile option.

      -a, --auto:  Suppress stdout output when keyup is triggered via a
          scheduler such as unix cron or alternative automated means to
          rotate keys on a periodic schedule.

      -c, --configure:  Configure custom values for runtime parameters.
          If local configuration file does not exist,  option writes new
          local configuration file to disk.  If a file exists, overwrite
          the existing configuration with updated values.

            Configure runtime options:  |  Display local config file:
                                        |
              $ keyup --configure       |       $ keyconfig

      -R, --key-report:  Key expiration report for  all identities found
          in local awscli configuration files. Expired keysets are noted
          in red. Displays metadata for all keysets including key create
          date,  and the Identity Access Management (IAM) user  to which
          the awscli profile name maps in the AWS Account.

      -d, --debug:  When True, only write newly generated credentials to
          temporary location on the  local filesystem instead of writing
          to local awscli config file(s).  Allows safe validation of the
          intgrity of the newly  created AWS authentication credentials.

      -V, --version:  Print the keyup package version.

      -h, --help:  Show this help message and exit.
```

CHAPTER 5

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CHAPTER 6

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CHAPTER 7

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   Version 3, 29 June 2007
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```

Also add information on how to contact you by electronic and paper mail.

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```
{project}  Copyright (C) {year}  {fullname}
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

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CHAPTER 8

Frequently Asked Questions

8.1 General Questions

8.1.1 Q: How do I rotate keys for the default awscli user?

A: Keys operations are conducted for the IAM user configured for the default profile user in the local awscli using the following:

```
$ keyup --profile default --operation up          # rotate (change out) keys
```

List keys for the default awscli user:

```
$ keyup --profile default --operation list        # list key information
```

Back to *Frequently Asked Questions* Top

8.1.2 Q: Which set of access keys will `keyup` replace if my IAM user has 2 sets of keys?

Answer

If you have more than one keyset associated with your IAM user, keyup compares the age of the two keysets in your account. An IAM user identity may be associated with a at a time.

Keyup examines the keys associated with your IAM user and replaces the oldest, *active* keyset.

- Oldest keys are deprecated
- Must be active (enabled)
- If only 1 active set of keys, will replace active and leave the inactive keys untouched.

Back to *Frequently Asked Questions* Index

8.1.3 Q: How often can I rotate my access keys? Is there a limit or does Amazon charge me?

A: There is no (practical) limit to how often you change your access keys.

Amazon does not charge for issuing new access keys. IAM Access Keys are a feature of every AWS Account.

Back to *Frequently Asked Questions* Top

8.1.4 Q: How do I renew access keys for another IAM user account instead of my own account?

A: Assuming your IAM user possess elevalated IAM priviledges to create and delete access keys for other users, you can rotate keys for another user via the following:

```
$ keyup --profile myIAMuser --user-name JoeUser --operation up

    # myIAMuser:  profile name alias for an IAM user with admin IAM permissions
    # JoeUser:    The IAM user account for which you wish to rotate access keys
```

Back to *Frequently Asked Questions* Top

8.2 Logging & Log Configuration

8.2.1 Q: How do I configure logging for `keyup`?

A: Logging is turned off by default for any new installation.

To turn on logging, start the configure menu via the following command:

```
$ keyup --configure
```

Answer 'True' when asked to enable logging.

Next select from one of two options:

- **SYSLOG**: logging to the system log file (/var/log/syslog)
- **FILE**: logging to a file you specify

8.2.2 Q: Why doesn't `keyup` produce any log output?

A: Logging is turned off by default for any new installation of **keyup**.

To turn on logging, start the configure menu via the following command:

```
$ keyup --configure
```

Answer 'True' when asked to enable logging when answering the guided configuration questions.

To verify logging is enabled in your specific keyup configuration, check that `ENABLE_LOGGING` parameter is set to True by viewing the contents of your configuration file with the following command:

```
$ keyconfig
```

It should display syntax similar to below:

```
{
    "KEY_BACKUP": {
        "BACKUP_ENABLE": false,
        "BACKUP_LOCATION": "/home/user/Backup/keysets"
    },
    "KEY_METADATA": {
        "KEYAGE_MAX_DAYS": 30,
        "KEYAGE_MAX_LIMIT": 365,
        "KEYAGE_MIN_DAYS": 1,
        "KEYAGE_WARNING": 2,
        "KEY_DEPRECATION": "AGE",
        "KEY_ENABLE_DELAY": 9
    },
    "LOGGING": {
        "ENABLE_LOGGING": true,
        "LOG_FILENAME": "keyup.log",
        "LOG_MODE": "FILE",
        "LOG_PATH": "/home/user/logs/keyup.log",
        "SYSLOG_FILE": false
    },
```

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```
    "PROJECT": {
        "CONFIG_DATE": "2019-03-19 16:53 UTC",
        "CONFIG_DIR": ".config",
        "CONFIG_FILENAME": "config.json",
        "CONFIG_PATH": "/home/user/.config/keyup/config.json",
        "CONFIG_SUBDIR": "keyup",
        "CONFIG_VERSION": "1.1.2",
        "HOME": "/home/user",
        "PACKAGE": "keyup"
    },
    "TEMP_CREDENTIALS": {
        "PROFILE_NAMES": []
    }
}
```

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8.3 Automated Key Rotation

8.3.1 Q: How do I automate rotation of access keys for my IAM user?

A: Use of scheduler is a common simple way to automate AWS access key rotation.

> On Linux, crontab can be setup as follows:

```
$ crontab -e
```

Once your users' crontab is open (any scheduler will work), enter the following to for daily access key rotation @ 0700 hrs every morning:

```
# keyup auto rotate
0 7 * * *  keyup --profile johndoe --operation up --auto
```

The `--auto` switch supresses all output to stdout, so `keyup` produces no output to the cli. Logging output is retained and the only way to troubleshoot any issues while operating in auto mode; thus, it is highly recommended that you ensure that logging is enabled and working.

If you haven't enabled logging yet, please see:

> *Q: How do I configure logging for keyup?*

Verify your crontab entry was saved by issuing:

```
$ crontab -l
```

You should see the following output:

```
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
```

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```
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.

# keyup auto rotate
0 7 * * 5  keyup --profile myUser --operation up --auto
```

Other Crontab Scheduler Examples:

Weekly Rotation every Sat 10:00 AM:

```
# weekly
0 10 * * 6  KEYUP=$(which keyup);  $KEYUP --profile johndoe --operation up --auto
```

Weekly access key rotation (every Friday) for another IAM user, but using your account permissions to perform the rotation:

```
# keyup auto rotate
0 7 * * 5 keyup --profile myUser  --operation up  --auto
```

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8.3.2 Q: Is it ok to rotate access keys while I have STS temporary credentials present in my local awscli configuration?

A: `keyup` has special logic to avoid disrupting STS Temporary Credentials if they are present in your local awscli configuration. The following summarizes the logic `keyup` employs when dealing with temporary credentials:

- `keyup` detects when STS credentials are present in the local credentials files
- If temporary credentials are detected, `keyup` attempts to determine if they are active by trying to autheni-cate to Amazon STS using 2 sets of temporary credentials.
- **If authentication fails**: `keyup` assumes the temporary credentials are expired and ignores them. key rotation proceeds automatically as normal
- **If authentication succeeds**: `keyup` assumes the temporary credentials are active and prohibits access key rotation.

Back to *Frequently Asked Questions* Top

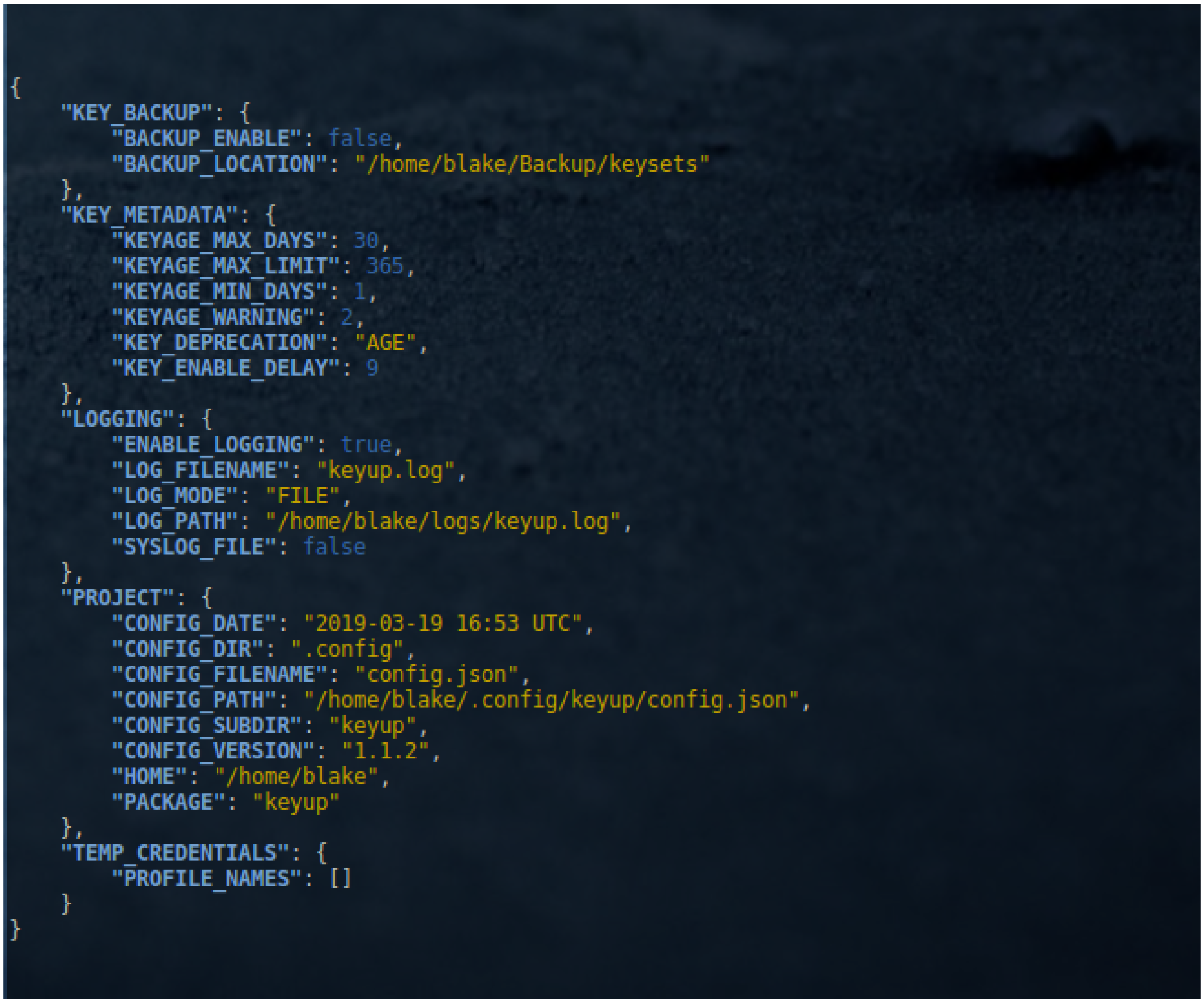
8.4 Miscellaneous Questions

8.4.1 Q: How do I know what options are set in my local config file?

A: Call the `keyconfig` script.

You can display keyup's local configuration file via by calling the console script:

```
$ keyconfig
```



```
{
    "KEY_BACKUP": {
        "BACKUP_ENABLE": false,
        "BACKUP_LOCATION": "/home/blake/Backup/keysets"
    },
    "KEY_METADATA": {
        "KEYAGE_MAX_DAYS": 30,
        "KEYAGE_MAX_LIMIT": 365,
        "KEYAGE_MIN_DAYS": 1,
        "KEYAGE_WARNING": 2,
        "KEY_DEPRECATION": "AGE",
        "KEY_ENABLE_DELAY": 9
    },
    "LOGGING": {
        "ENABLE_LOGGING": true,
        "LOG_FILENAME": "keyup.log",
        "LOG_MODE": "FILE",
        "LOG_PATH": "/home/blake/logs/keyup.log",
        "SYSLOG_FILE": false
    },
    "PROJECT": {
        "CONFIG_DATE": "2019-03-19 16:53 UTC",
        "CONFIG_DIR": ".config",
        "CONFIG_FILENAME": "config.json",
        "CONFIG_PATH": "/home/blake/.config/keyup/config.json",
        "CONFIG_SUBDIR": "keyup",
        "CONFIG_VERSION": "1.1.2",
        "HOME": "/home/blake",
        "PACKAGE": "keyup"
    },
    "TEMP_CREDENTIALS": {
        "PROFILE_NAMES": []
    }
}
```

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CHAPTER 9

Dependencies

Python3 installed, one of the following versions:

-
-

  Python 3 supported version *is a minimum requirement*.

Linux Operating System, one of the following:

- Redhat Enterprise Linux v7.X
- Ubuntu 14.04, Ubuntu 16.04, and corresponding Ubuntu variants
- Amazon Linux (2016.03+)

Follow to verify the python version installed on linux.

Windows Operating System:

- Windows 7
- Windows 8 (not tested)
- Windows 10

Follow to verify the python version installed on windows.

Installation via Source

- GNU make v4+ binary installed
- bash v4+ v4+
- Python3 v3.6+

- Python Package Manager (pip)

IAM Permissions

- Minimum permissions for each resource (next section)

Back to *Dependencies* top

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CHAPTER 10

IAM Permissions

Required permissions to use **keyup**.

10.1 Permissions Contents

10.2 Required IAM Policy Permissions

There are minimal permissions required to return valid results for an IAM user. If an iam user referenced in the local awscli configuration file does not have adequate permissions to return access key information, **keyup** will simply skip the user and omit the iam user from the key report.

The following IAM policy must be assigned to each IAM user either via group policy assignment or directly attached to the IAM user identity in the AWS Account.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Action": [
        "iam:ListAccountAliases"
      ],
      "Resource": [
```

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```
        "arn:aws:iam::000000000000:user/*"
      ],
      "Effect": "Allow",
      "Sid": "iamAccountInfo"
    },
    {
      "Action": [
        "iam:CreateAccessKey",
        "iam:DeleteAccessKey",
        "iam:ListAccessKeys",
        "iam:GetAccessKeyLastUsed"
      ],
      "Resource": [
        "arn:aws:iam::742134111111:user/${aws:username}"
      ],
      "Effect": "Allow",
      "Sid": "iamUserChangeOwnAccessKeys"
    }
  ]
}
```

Back to *IAM Permissions* Top

10.3 Recommended IAM Policy Permissions

The policy below is highly recommended as a complement to the required IAM permissions policy above. The recommended policy will require a 2-factor MFA code when attempting to provision resources in an AWS Account.

```
{
  "Statement": [
    {
      "Action": [
        "iam:ChangePassword",
        "iam:CreateLoginProfile",
        "iam:DeleteLoginProfile",
        "iam:GetAccountPasswordPolicy",
        "iam:GetAccountSummary",
        "iam:GetLoginProfile",
        "iam:UpdateLoginProfile"
      ],
      "Effect": "Allow",
      "Resource": [
        "arn:aws:iam::000000000000:user/${aws:username}"
      ],
      "Sid": "AllowIndividualUserToSeeTheirAccountInformation"
    },
    {
      "Action": [
        "iam:ListVirtualMFADevices",
        "iam:ListMFADevices"
      ],
      "Effect": "Allow",
      "Resource": [
```

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```
        "arn:aws:iam::000000000000:user/${aws:username}",
        "arn:aws:iam::000000000000:mfa/*"
      ],
      "Sid": "AllowIndividualUserToListTheirMFA"
    },
    {
      "Action": [
        "iam:CreateVirtualMFADevice",
        "iam:DeactivateMFADevice",
        "iam:DeleteVirtualMFADevice",
        "iam:EnableMFADevice",
        "iam:ResyncMFADevice"
      ],
      "Effect": "Allow",
      "Resource": [
        "arn:aws:iam::000000000000:user/${aws:username}",
        "arn:aws:iam::000000000000:mfa/*"
      ],
      "Sid": "AllowIndividualUserToManageThierMFA"
    },
    {
      "Condition": {
        "Null": {
          "aws:MultiFactorAuthAge": "true"
        }
      },
      "Effect": "Deny",
      "NotAction": "iam:*",
      "Resource": "*",
      "Sid": "DoNotAllowAnythingOtherThanAboveUnlessMFAd"
    }
  ],
  "Version": "2012-10-17"
}
```

Back to *IAM Permissions* Top

10.4 IAM Policy Details

The iam policy provides explicit permissions to an individual user to read and update *only* the user's own iam access keys.

Note: The IAM policy permissions allow keyup to rotate access keys *without requiring a Multi-factor Authorization (MFA, 2-factor) code*. This is a recommended policy provided all other permissions to provision or modify resources in the AWS Account mandate a 2-factor MFA code.

an attacker can obtain keys with a compromised iam user account, but can nothing with them.

`iam:ListAccountAliases`:

- Required to query the AWS Account for an assigned alias (human-readable account name).
- Not all AWS Accounts have an alias assigned.

- If no alias is returned, the AWS Account Id is displayed instead.

`iam:CreateAccessKey`:

- Required for keyup to generate new access keys when rotating keys.

`iam:DeleteAccessKey`:

- Required by keyup to delete deprecated access keys after a new set is generated.

`iam:ListAccessKeys`:

- Required by keyup to list access keys for a given IAM user.

`iam:GetAccessKeyLastUsed`:

- Required by keyup to retrieve access key meta data (data about a user's key set).

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CHAPTER 11

Installation

Choose your operating system for correct installation instructions:

Linux Distributions

- *Redhat Enterprise Linux v7.X / Centos 7.X*
- *Ubuntu v16.04+, Ubuntu Variants*
- *Amazon Linux v2016+*

Windows Distributions

- *Microsoft Windows 7*
- *Microsoft Windows 10*

Installation via Source

- *Build Source Code*

Post-Installation

- *Verify Your Installation*

Note

- Generally, any modern Linux distribution may work.
- Python 3 supported version *is a hard requirement*.

11.1 Redhat Enterprise Linux v7.X / Centos 7.X

- Install Python3 Package Manager

```
$ sudo yum install python3-pip
```

- Install awscli

  Detailed instructions can be found in the README located at: https://github.com/aws/aws-cli/

  The easiest method, provided your platform supports it, is via pip.

```
$ pip3 install awscli --user
```

- If you have the aws-cli installed and want to upgrade to the latest version you can run:

```
$ pip3 install --upgrade awscli --user
```

- Installation via pip3 (python3 packages via pip package manager)

```
$ pip3 install keyup --user
```

- *Verify Your Installation*

Back to *Installation* Table of Contents

11.2 Ubuntu v16.04+, Ubuntu Variants

- Install Python3 Package Manager

```
$ sudo apt-get install python3-pip
```

- Install awscli

  Detailed instructions can be found in the README located at: https://github.com/aws/aws-cli/

  The easiest method, provided your platform supports it, is via pip.

```
$ pip3 install awscli --user
```

- If you have the aws-cli installed and want to upgrade to the latest version you can run:

```
$ pip3 install --upgrade awscli --user
```

- Installation via pip3 (python3 packages via pip package manager)

```
$ pip3 install keyup --user
```

- *Verify Your Installation*

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11.3 Amazon Linux v2016+

- Install Python3 Package Manager:

```
$ sudo yum install python36-pip

OR

$ sudo yum install python35-pip / python34-pip    # latest your distribution supports
```

- Install keyup:

```
$ pip3 install keyup --user
```

- *Verify Your Installation*

Back to *Installation* Table of Contents

11.4 Microsoft Windows 7

- Install Python3 by downloading the latest Python3 version for Windows
- Install **keyup**:

```
$ pip install keyup
```

- *Verify Your Installation*

Back to *Installation* Table of Contents

11.5 Microsoft Windows 10

- Install Python3 by downloading the latest Python3 version for Windows
- Install **keyup**:

```
$ pip install keyup
```

- *Verify Your Installation*

Back to *Installation* Table of Contents

11.6 Build Source Code

To install locally from source code, do the following:

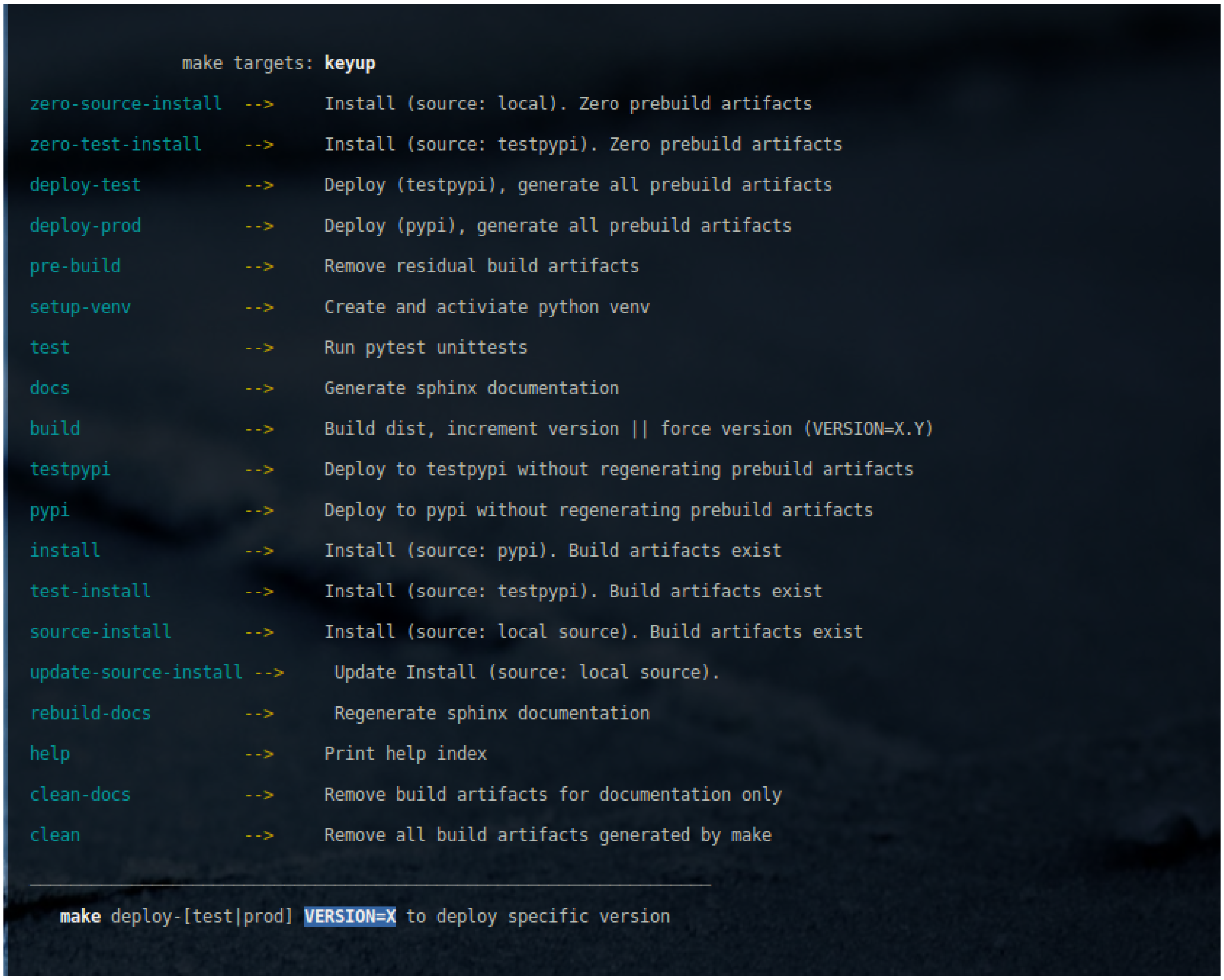
Check out the `keyup` code repository:

```
$ git clone https://blakeca00@bitbucket.org/blakeca00/keyup.git

$ cd keyup/
```

Display the list of make targets:

```
$ make help
```



```
               make targets: keyup
zero-source-install  -->     Install (source: local). Zero prebuild artifacts
zero-test-install    -->     Install (source: testpypi). Zero prebuild artifacts
deploy-test          -->     Deploy (testpypi), generate all prebuild artifacts
deploy-prod          -->     Deploy (pypi), generate all prebuild artifacts
pre-build            -->     Remove residual build artifacts
setup-venv           -->     Create and activate python venv
test                 -->     Run pytest unittests
docs                 -->     Generate sphinx documentation
build                -->     Build dist, increment version || force version (VERSION=X.Y)
testpypi             -->     Deploy to testpypi without regenerating prebuild artifacts
pypi                 -->     Deploy to pypi without regenerating prebuild artifacts
install              -->     Install (source: pypi). Build artifacts exist
test-install         -->     Install (source: testpypi). Build artifacts exist
source-install       -->     Install (source: local source). Build artifacts exist
update-source-install -->     Update Install (source: local source).
rebuild-docs         -->      Regenerate sphinx documentation
help                 -->     Print help index
clean-docs           -->     Remove build artifacts for documentation only
clean                -->     Remove all build artifacts generated by make

   make deploy-[test|prod] VERSION=X to deploy specific version
```

To install locally in virtual environment, make the install from source target:

```
$ make source-install
```

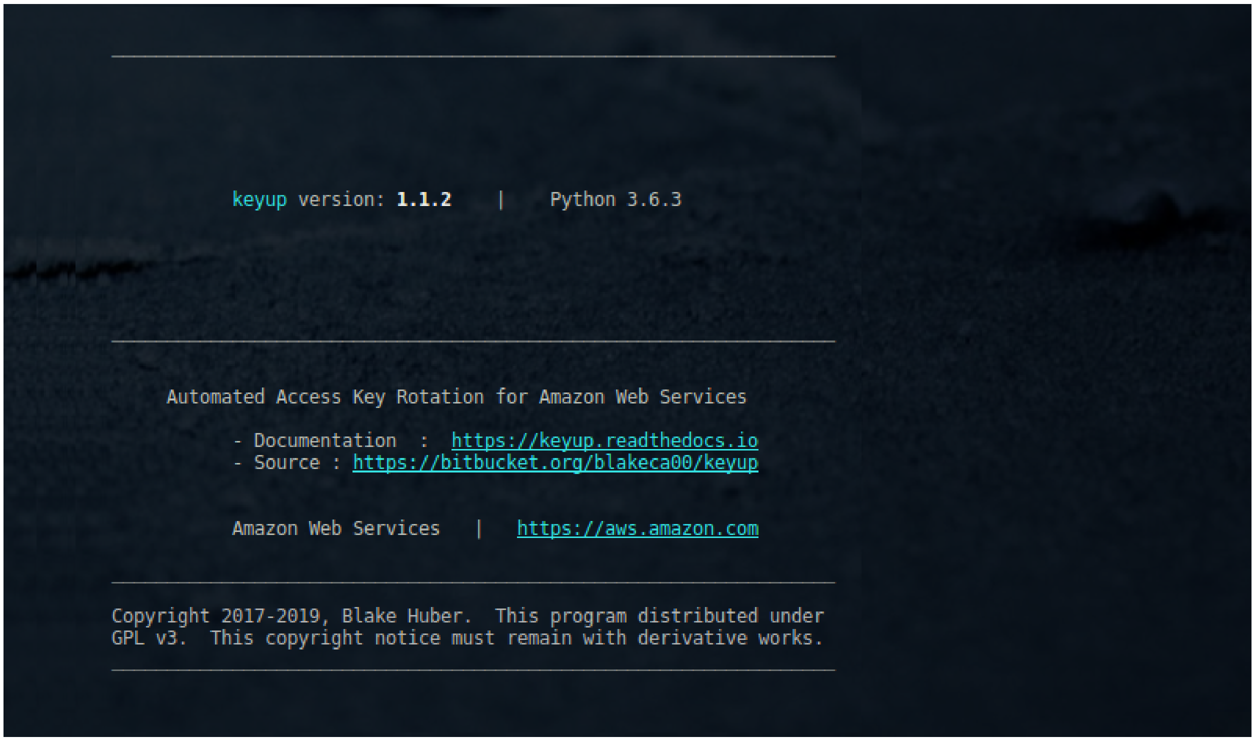
- *Verify Your Installation*

CHAPTER 12

Post-Installation

12.1 Verify Your Installation

```
$ keyup --version
```



```
    ___________________________________________________________________



              keyup version: 1.1.2    |    Python 3.6.3



    ___________________________________________________________________

         Automated Access Key Rotation for Amazon Web Services

               - Documentation  :  https://keyup.readthedocs.io
               - Source : https://bitbucket.org/blakeca00/keyup

               Amazon Web Services   |   https://aws.amazon.com
    ___________________________________________________________________

    Copyright 2017-2019, Blake Huber.  This program distributed under
    GPL v3.  This copyright notice must remain with derivative works.
    ___________________________________________________________________
```

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CHAPTER 13

Use Cases

3 Main Use Cases for keyup:

- *List Access Keys*
- *Rotate Keys (User-Initiated)*
- *Rotate Keys (Automated)*

13.1 List Access Keys

Display access keys for a specific IAM user in an AWS Account.

```
$ keyup --profile [PROFILE] --operation list
```

`[PROFILE]:`

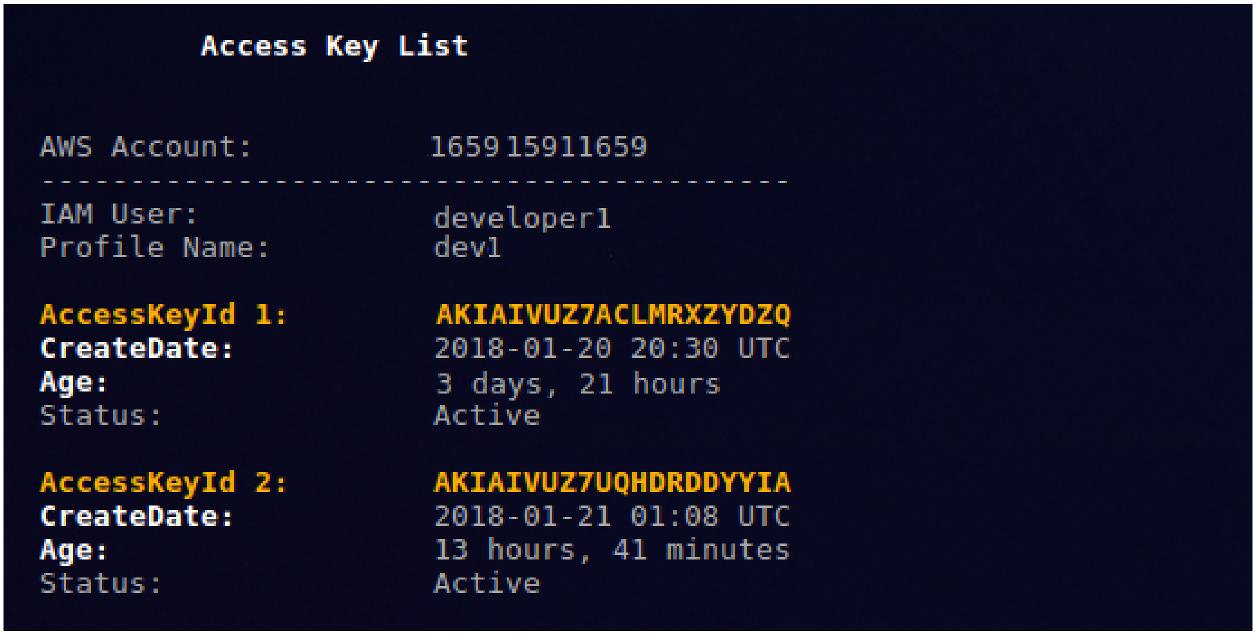
- awscli profile name profile from the local awscli config
- IAM user for whom you wish to conduct key operations

`list:`

- list operation, lists key information for the profile username given in PROFILE.
- Prints report showing access key id, key age (time since creation), and status (active or inactive)

13.2 Rotate Keys (User-Initiated)

Attended mode, manual operation run from cli. Operator can enter MFA code if required



```
          Access Key List


 AWS Account:           1659 15911659
 ------------------------------------------
 IAM User:              developer1
 Profile Name:          dev1

 AccessKeyId 1:         AKIAIVUZ7ACLMRXZYDZQ
 CreateDate:            2018-01-20 20:30 UTC
 Age:                   3 days, 21 hours
 Status:                Active

 AccessKeyId 2:         AKIAIVUZ7UQHDRDDYYIA
 CreateDate:            2018-01-21 01:08 UTC
 Age:                   13 hours, 41 minutes
 Status:                Active
```

```
$ keyup --profile [PROFILE] --operation up
```

`[PROFILE]`:

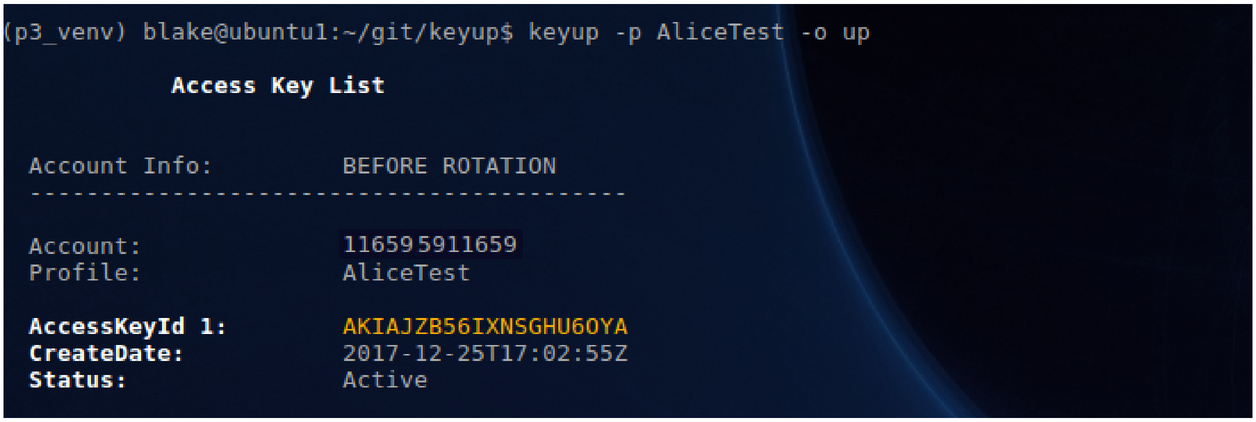
- awscli profile name profile from the local awscli config
- IAM user for whom you wish to conduct key operations

`up`:

- update (rotate, or renew) key operation.
- Creates new access keyset (access key, secret key), installs keys, delete old keys from AWS
- Short for `keyup`, which can also be used

Rotate Keys output (click below to enlarge imges)

(1) Initiate access key rotation ('up'). Displays access keys for user prior to key renewal:



```
(p3_venv) blake@ubuntu1:~/git/keyup$ keyup -p AliceTest -o up

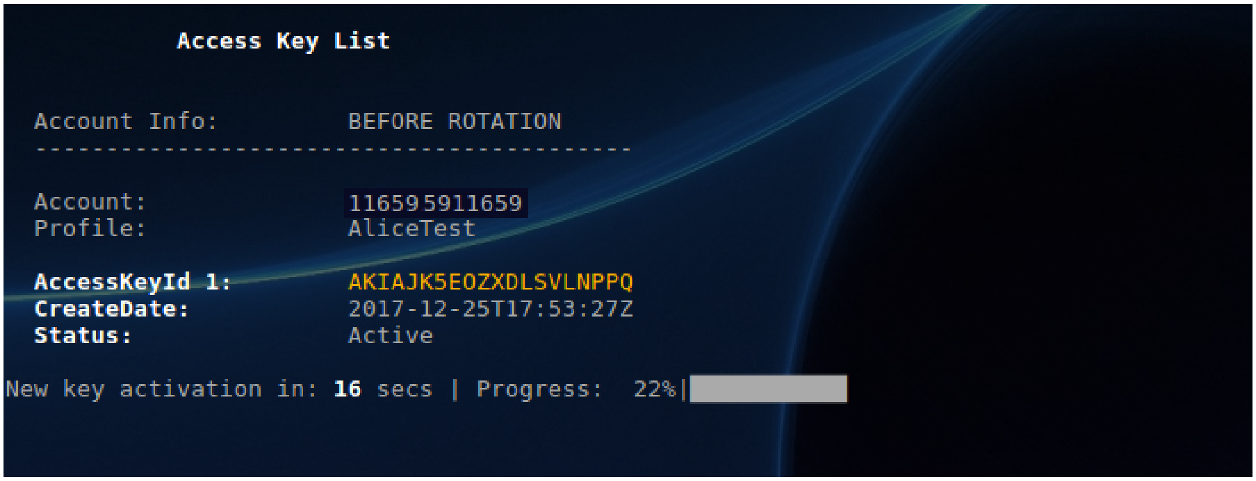
          Access Key List


 Account Info:          BEFORE ROTATION
 ------------------------------------------

 Account:               11659 5911659
 Profile:               AliceTest

 AccessKeyId 1:         AKIAJZB56IXNSGHU6OYA
 CreateDate:            2017-12-25T17:02:55Z
 Status:                Active
```

(2) Progress during key renewal:



```
          Access Key List

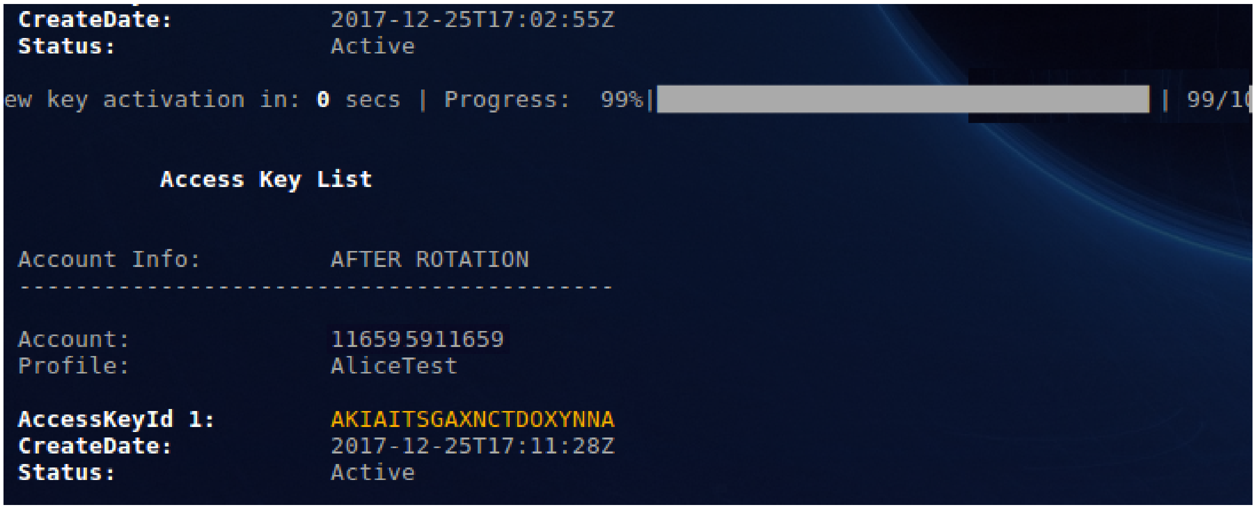

  Account Info:          BEFORE ROTATION
  ------------------------------------------

  Account:               116595911659
  Profile:               AliceTest

  AccessKeyId 1:         AKIAJK5EOZXDLSVLNPPQ
  CreateDate:            2017-12-25T17:53:27Z
  Status:                Active

New key activation in: 16 secs | Progress:  22%|███████
```

(3) Display access keys after key rotation showing new keyset generated:



```
 CreateDate:            2017-12-25T17:02:55Z
 Status:                Active

ew key activation in: 0 secs | Progress:  99%|██████████████████████| 99/10

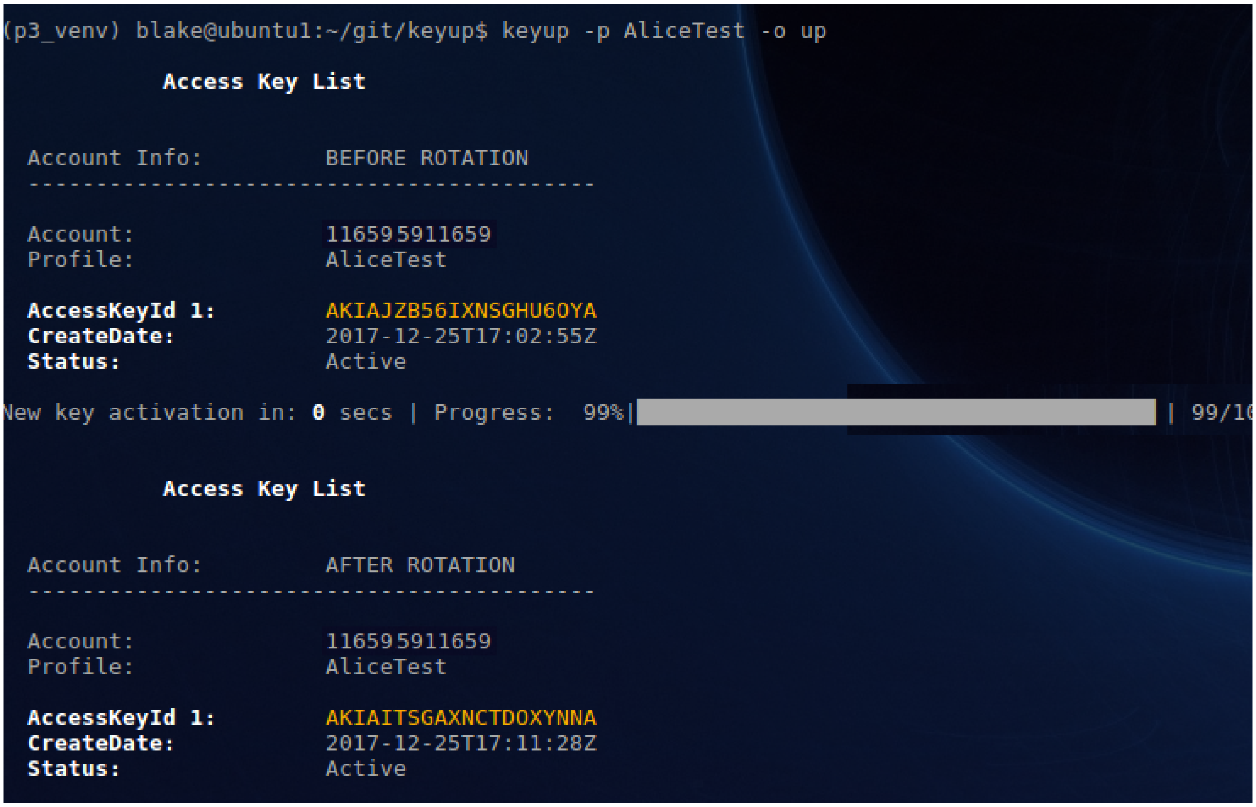

          Access Key List


 Account Info:          AFTER ROTATION
 ------------------------------------------

 Account:               116595911659
 Profile:               AliceTest

 AccessKeyId 1:         AKIAITSGAXNCTDOXYNNA
 CreateDate:            2017-12-25T17:11:28Z
 Status:                Active
```

(4) End-to-end cli view of the user-initiated key rotation process:



```
(p3_venv) blake@ubuntu1:~/git/keyup$ keyup -p AliceTest -o up
            Access Key List

  Account Info:          BEFORE ROTATION
  ------------------------------------------

  Account:               116595911659
  Profile:               AliceTest

  AccessKeyId 1:         AKIAJZB56IXNSGHU6OYA
  CreateDate:            2017-12-25T17:02:55Z
  Status:                Active

New key activation in: 0 secs | Progress:  99%|██████████████████████████████████████| 99/10

            Access Key List

  Account Info:          AFTER ROTATION
  ------------------------------------------

  Account:               116595911659
  Profile:               AliceTest

  AccessKeyId 1:         AKIAITSGAXNCTDOXYNNA
  CreateDate:            2017-12-25T17:11:28Z
  Status:                Active
```

13.3 Rotate Keys (Automated)

Automated rotation of access keys; typically executed via cron or similar scheduling mechanism

```
$ keyup --profile [PROFILE] --operation up --auto
```

[PROFILE]:

- profile from the local awscli config that is the IAM user for whom you wish to keyup

up:

- up: create new access keys, install them, delete old keys from AWS

--auto:

- For use when calling keyup from an automated scheduler or other programmatic execution mechanism.
- Flag suppresses all stdout output
- Log output to the filesystem is retained.

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CHAPTER 14

Key Report

Overview of keyup’s Key Report and required Identity Access Management (IAM) permissions.

14.1 Key Report Contents

14.2 Report Overview

`keyup` provides a parameter to produce a report for all iam users referenced in the local configuration file. The report shows the expired status of all access keys for these users. This is valuable because it allows the user to understand which iam users require renewed access keys without running **keyup** for each iam user account individually.

Execute the following command to run the key report for all iam users in the local :

```
$ keyup --key-report
```

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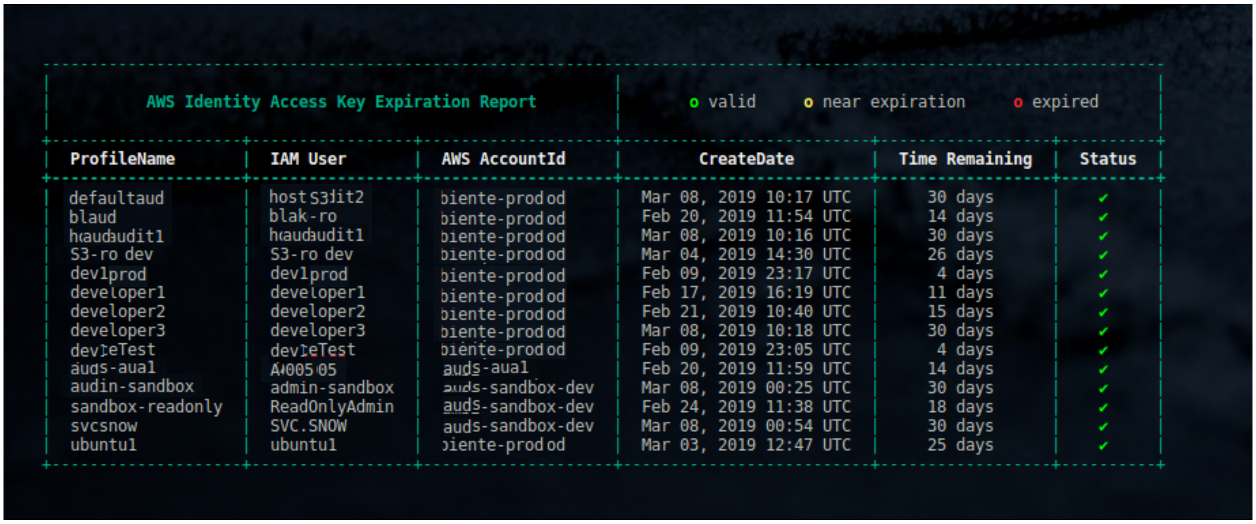

```
+-------------------------------------------------------------------------------------------------------------------------------+
|                                                          |                                                                    |
|      AWS Identity Access Key Expiration Report           |        o valid       o near expiration       o expired             |
|                                                          |                                                                    |
+-----------------------+------------------+---------------+-------------------------+-------------------+------------------+
| ProfileName           | IAM User         | AWS AccountId |        CreateDate       | Time Remaining    | Status           |
+-----------------------+------------------+---------------+-------------------------+-------------------+------------------+
| defaultaud            | host S3jit2      | biente-prodod | Mar 08, 2019 10:17 UTC  |     30 days       |    ✓             |
| blaud                 | blak-ro          | biente-prodod | Feb 20, 2019 11:54 UTC  |     14 days       |    ✓             |
| hcaudaudit1           | hcaudaudit1      | biente-prodod | Mar 08, 2019 10:16 UTC  |     30 days       |    ✓             |
| S3-ro dev             | S3-ro dev        | biente-prodod | Mar 04, 2019 14:30 UTC  |     26 days       |    ✓             |
| dev1prod              | dev1prod         | biente-prodod | Feb 09, 2019 23:17 UTC  |      4 days       |    ✓             |
| developer1            | developer1       | biente-prodod | Feb 17, 2019 16:19 UTC  |     11 days       |    ✓             |
| developer2            | developer2       | biente-prodod | Feb 21, 2019 10:40 UTC  |     15 days       |    ✓             |
| developer3            | developer3       | biente-prodod | Mar 08, 2019 10:18 UTC  |     30 days       |    ✓             |
| devIeTest             | devIeTest        | biente-prodod | Feb 09, 2019 23:05 UTC  |      4 days       |    ✓             |
| auds-aual             | A4005 05         | auds-aual     | Feb 20, 2019 11:59 UTC  |     14 days       |    ✓             |
| audin-sandbox         | admin-sandbox    | auds-sandbox-dev | Mar 08, 2019 00:25 UTC |   30 days       |    ✓             |
| sandbox-readonly      | ReadOnlyAdmin    | auds-sandbox-dev | Feb 24, 2019 11:38 UTC |   18 days       |    ✓             |
| svcsnow               | SVC.SNOW         | auds-sandbox-dev | Mar 08, 2019 00:54 UTC |   30 days       |    ✓             |
| ubuntu1               | ubuntu1          | biente-prodod | Mar 03, 2019 12:47 UTC  |     25 days       |    ✓             |
+-----------------------+------------------+---------------+-------------------------+-------------------+------------------+
```

14.3 Required User Permissions

There are minimal Identity Access Management (IAM) permissions required to return valid results for a each IAM user. If an iam user referenced in the local awscli configuration file does not have adequate permissions to return results for the key report, **keyup** will simply skip the user and omit the iam user from the key report.

The following IAM policy must be assigned to each IAM user either via group policy assignment or directly attached to the IAM user identity in the AWS Account.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Action": [
        "iam:ListAccountAliases"
      ],
      "Resource": [
        "arn:aws:iam::000000000000:user/*"
      ],
      "Effect": "Allow",
      "Sid": "iamAccountInfo"
    },
    {
      "Action": [
        "iam:CreateAccessKey",
        "iam:DeleteAccessKey",
        "iam:ListAccessKeys",
        "iam:GetAccessKeyLastUsed"
      ],
      "Resource": [
        "arn:aws:iam::742134111111:user/${aws:username}"
      ],
      "Effect": "Allow",
      "Sid": "iamUserChangeOwnAccessKeys"
    }
  ]
}
```

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14.4 Recommended User Permissions

The policy below is highly recommended as a complement to the required IAM permissions policy above. The recommended policy will require a 2-factor MFA code when attempting to provision resources in an AWS Account.

```
{
  "Statement": [
    {
      "Action": [
        "iam:ChangePassword",
        "iam:CreateLoginProfile",
        "iam:DeleteLoginProfile",
        "iam:GetAccountPasswordPolicy",
        "iam:GetAccountSummary",
        "iam:GetLoginProfile",
        "iam:UpdateLoginProfile"
      ],
      "Effect": "Allow",
      "Resource": [
        "arn:aws:iam::000000000000:user/${aws:username}"
      ],
      "Sid": "AllowIndividualUserToSeeTheirAccountInformation"
    },
    {
      "Action": [
        "iam:ListVirtualMFADevices",
        "iam:ListMFADevices"
      ],
      "Effect": "Allow",
      "Resource": [
        "arn:aws:iam::000000000000:user/${aws:username}",
        "arn:aws:iam::000000000000:mfa/*"
      ],
      "Sid": "AllowIndividualUserToListTheirMFA"
    },
    {
      "Action": [
        "iam:CreateVirtualMFADevice",
        "iam:DeactivateMFADevice",
        "iam:DeleteVirtualMFADevice",
        "iam:EnableMFADevice",
        "iam:ResyncMFADevice"
      ],
      "Effect": "Allow",
      "Resource": [
        "arn:aws:iam::000000000000:user/${aws:username}",
        "arn:aws:iam::000000000000:mfa/*"
      ],
      "Sid": "AllowIndividualUserToManageThierMFA"
    },
    {
      "Condition": {
        "Null": {
```

(continues on next page)

(continued from previous page)

```
          "aws:MultiFactorAuthAge": "true"
        }
      },
      "Effect": "Deny",
      "NotAction": "iam:*",
      "Resource": "*",
      "Sid": "DoNotAllowAnythingOtherThanAboveUnlessMFAd"
    }
  ],
  "Version": "2012-10-17"
}
```

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14.5 Policies Explained

See the *IAM Policy Details* section to gain an understanding of each each IAM policy provision and the permissions granted to a user.

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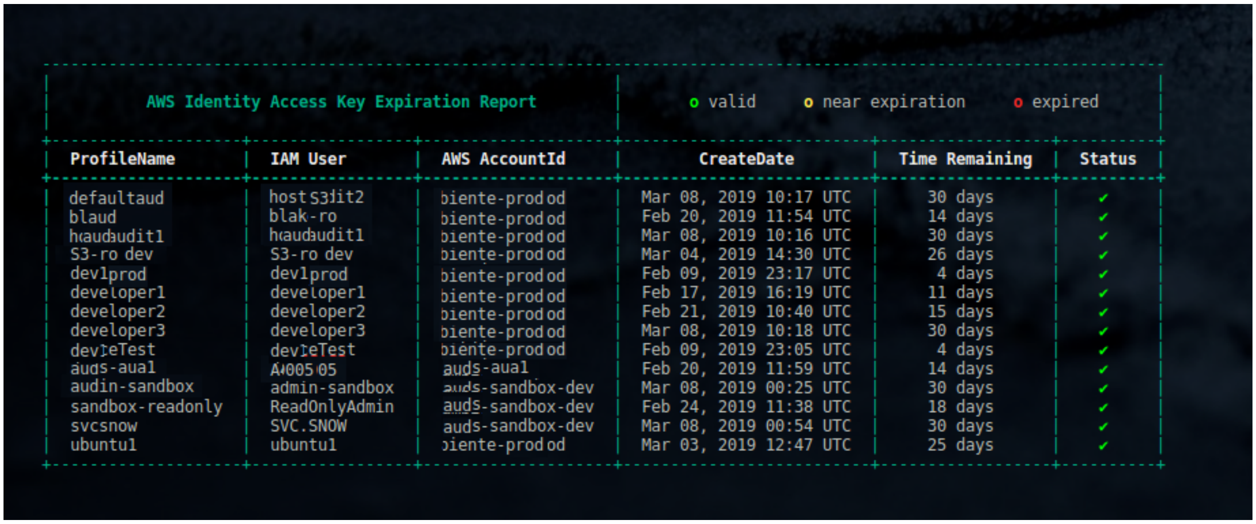
14.6 Screenshots

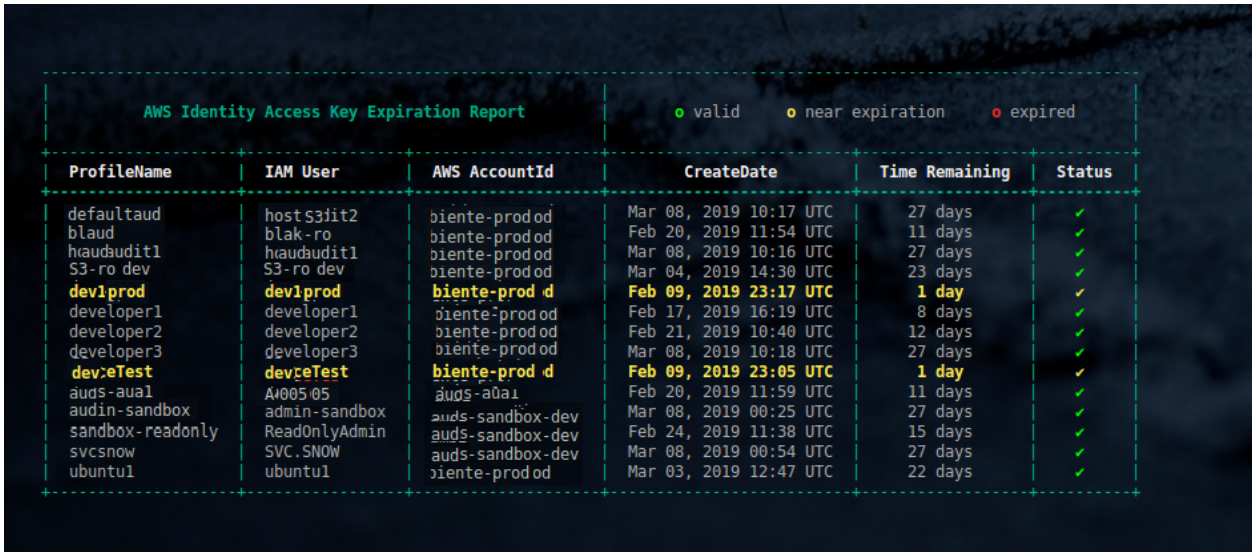
Sample key report screenshots (click to enlarge).

- Key report showing all users with valid access keys (none expired):



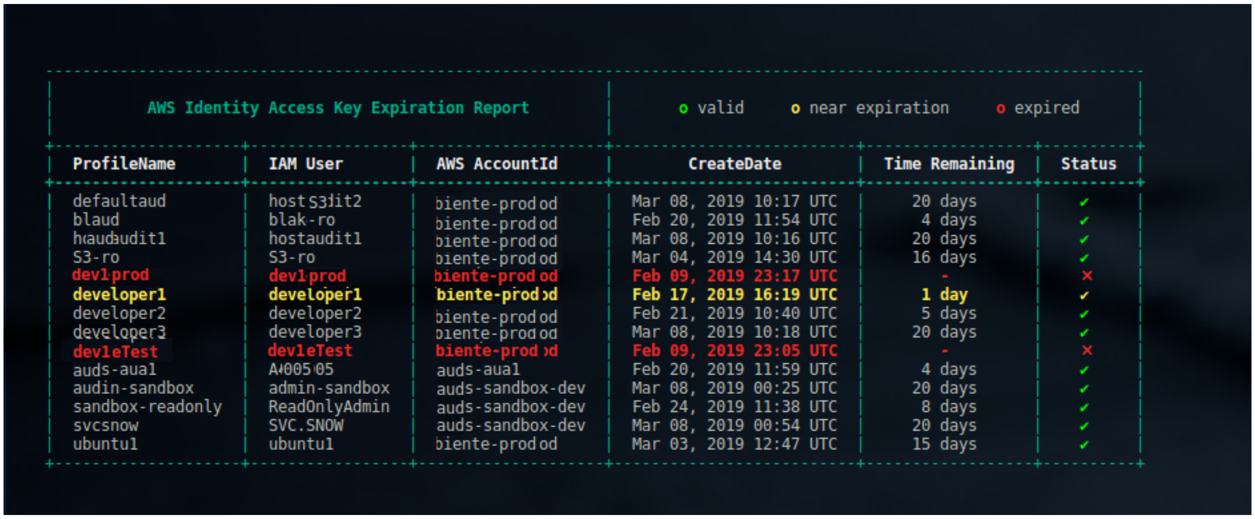
```
-------------------------------------------------------------------------------------------------------------------
|                                                                  |                                                  |
|           AWS Identity Access Key Expiration Report              |     o valid     o near expiration     o expired  |
|                                                                  |                                                  |
+-----------------+-------------+----------------+--------------------------+------------------+---------+
| ProfileName     | IAM User    | AWS AccountId  |        CreateDate        | Time Remaining   | Status  |
+-----------------+-------------+----------------+--------------------------+------------------+---------+
| defaultaud      | host S3it2  | biente-prod od |  Mar 08, 2019 10:17 UTC  |    30 days       |    ✓    |
| blaud           | blak-ro     | biente-prod od |  Feb 20, 2019 11:54 UTC  |    14 days       |    ✓    |
| hcaudaudit1     | hcaudaudit1 | biente-prod od |  Mar 08, 2019 10:16 UTC  |    30 days       |    ✓    |
| S3-ro dev       | S3-ro dev   | biente-prod od |  Mar 04, 2019 14:30 UTC  |    26 days       |    ✓    |
| dev1prod        | dev1prod    | biente-prod od |  Feb 09, 2019 23:17 UTC  |     4 days       |    ✓    |
| developer1      | developer1  | biente-prod od |  Feb 17, 2019 16:19 UTC  |    11 days       |    ✓    |
| developer2      | developer2  | biente-prod od |  Feb 21, 2019 10:40 UTC  |    15 days       |    ✓    |
| developer3      | developer3  | biente-prod od |  Mar 08, 2019 10:18 UTC  |    30 days       |    ✓    |
| devieTest       | devIeTest   | biente-prod od |  Feb 09, 2019 23:05 UTC  |     4 days       |    ✓    |
| auds-aual       | A4005 05    | auds-aual      |  Feb 20, 2019 11:59 UTC  |    14 days       |    ✓    |
| audin-sandbox   | admin-sandbox | auds-sandbox-dev |  Mar 08, 2019 00:25 UTC  |    30 days     |    ✓    |
| sandbox-readonly | ReadOnlyAdmin | auds-sandbox-dev |  Feb 24, 2019 11:38 UTC |    18 days     |    ✓    |
| svcsnow         | SVC.SNOW    | auds-sandbox-dev |  Mar 08, 2019 00:54 UTC  |    30 days     |    ✓    |
| ubuntu1         | ubuntu1     | biente-prod od |  Mar 03, 2019 12:47 UTC  |    25 days       |    ✓    |
+-----------------+-------------+----------------+--------------------------+------------------+---------+
```

- Key report showing keys within 48 hours of expiration:



```
+--------------------------------------------------------------------------------------------------------------------+
|                                                        |                                                           |
|       AWS Identity Access Key Expiration Report        |      o valid     o near expiration     o expired           |
|                                                        |                                                           |
+--------------------+-----------------+-----------------+-------------------------+------------------+--------------+
| ProfileName        | IAM User        | AWS AccountId   |        CreateDate       | Time Remaining   |  Status      |
+--------------------+-----------------+-----------------+-------------------------+------------------+--------------+
| defaultaud         | host S3lit2     | biente-prod od  | Mar 08, 2019 10:17 UTC  |     27 days      |    ✓         |
| blaud              | blak-ro         | biente-prod od  | Feb 20, 2019 11:54 UTC  |     11 days      |    ✓         |
| haudaudit1         | haudaudit1      | biente-prod od  | Mar 08, 2019 10:16 UTC  |     27 days      |    ✓         |
| S3-ro dev          | S3-ro dev       | biente-prod od  | Mar 04, 2019 14:30 UTC  |     23 days      |    ✓         |
| dev1prod           | dev1prod        | biente-prod d   | Feb 09, 2019 23:17 UTC  |      1 day       |    ✓         |
| developer1         | developer1      | biente-prod od  | Feb 17, 2019 16:19 UTC  |      8 days      |    ✓         |
| developer2         | developer2      | biente-prod od  | Feb 21, 2019 10:40 UTC  |     12 days      |    ✓         |
| developer3         | developer3      | biente-prod od  | Mar 08, 2019 10:18 UTC  |     27 days      |    ✓         |
| dev:eTest          | dev:eTest       | biente-prod d   | Feb 09, 2019 23:05 UTC  |      1 day       |    ✓         |
| auds-aua1          | A4005 05        | auds-aua1       | Feb 20, 2019 11:59 UTC  |     11 days      |    ✓         |
| audin-sandbox      | admin-sandbox   | auds-sandbox-dev| Mar 08, 2019 00:25 UTC  |     27 days      |    ✓         |
| sandbox-readonly   | ReadOnlyAdmin   | auds-sandbox-dev| Feb 24, 2019 11:38 UTC  |     15 days      |    ✓         |
| svcsnow            | SVC.SNOW        | auds-sandbox-dev| Mar 08, 2019 00:54 UTC  |     27 days      |    ✓         |
| ubuntu1            | ubuntu1         | biente-prod od  | Mar 03, 2019 12:47 UTC  |     22 days      |    ✓         |
+--------------------+-----------------+-----------------+-------------------------+------------------+--------------+
```

- Key report showing expired keys:



```
+--------------------------------------------------------------------------------------------------------------------+
|                                                        |                                                           |
|       AWS Identity Access Key Expiration Report        |      o valid     o near expiration     o expired           |
|                                                        |                                                           |
+--------------------+-----------------+-----------------+-------------------------+------------------+--------------+
| ProfileName        | IAM User        | AWS AccountId   |        CreateDate       | Time Remaining   |  Status      |
+--------------------+-----------------+-----------------+-------------------------+------------------+--------------+
| defaultaud         | host S3lit2     | biente-prod od  | Mar 08, 2019 10:17 UTC  |     20 days      |    ✓         |
| blaud              | blak-ro         | biente-prod od  | Feb 20, 2019 11:54 UTC  |      4 days      |    ✓         |
| haudaudit1         | hostaudit1      | biente-prod od  | Mar 08, 2019 10:16 UTC  |     20 days      |    ✓         |
| S3-ro              | S3-ro           | biente-prod od  | Mar 04, 2019 14:30 UTC  |     16 days      |    ✓         |
| dev1prod           | dev1prod        | biente-prod od  | Feb 09, 2019 23:17 UTC  |       -          |    ✗         |
| developer1         | developer1      | biente-prod od  | Feb 17, 2019 16:19 UTC  |      1 day       |    ✓         |
| developer2         | developer2      | biente-prod od  | Feb 21, 2019 10:40 UTC  |      5 days      |    ✓         |
| developer3         | developer3      | biente-prod od  | Mar 08, 2019 10:18 UTC  |     20 days      |    ✓         |
| dev1eTest          | dev1eTest       | biente-prod od  | Feb 09, 2019 23:05 UTC  |       -          |    ✗         |
| auds-aua1          | A4005 05        | auds-aua1       | Feb 20, 2019 11:59 UTC  |      4 days      |    ✓         |
| audin-sandbox      | admin-sandbox   | auds-sandbox-dev| Mar 08, 2019 00:25 UTC  |     20 days      |    ✓         |
| sandbox-readonly   | ReadOnlyAdmin   | auds-sandbox-dev| Feb 24, 2019 11:38 UTC  |      8 days      |    ✓         |
| svcsnow            | SVC.SNOW        | auds-sandbox-dev| Mar 08, 2019 00:54 UTC  |     20 days      |    ✓         |
| ubuntu1            | ubuntu1         | biente-prod od  | Mar 03, 2019 12:47 UTC  |     15 days      |    ✓         |
+--------------------+-----------------+-----------------+-------------------------+------------------+--------------+
```

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CHAPTER 15

Code Summary Index

Module keyup.cli

authenticated	Tests generic authentication status to AWS Account
boto3_session	Summary:
help_menu	Displays help menu contents
get_current_key	Extracts the STS AccessKeyId currently utilised in user's
remove_temporary_credentials	Filers temporary credentials from the list of profile-names
clean_config	Test local awscli config for Active temporary credentails
parse_awscli	Parse, update local awscli config credentials
set_logging	Enable or disable logging per config object parameter
precheck	Verify project runtime dependencies
create_keyset	Creates new access key, secret key pair for iam user
set_keyset	Sets new access keys in memory to execute requests to Amazon APIs
write_keyset	Write out new awscli credentials to local config
write_keyset_backup	Writes newly created keyset to disk provided configuration file flag set:
configure_keyset	Parses local awscli config and reconfigures it with
delete_keyset	Deletes oldest access key credentials associated with a user
options	Parse cli parameter options
package_version	Prints package version and requisite PACKAGE info
shared_credentials_location	Discover alterate location for awscli shared credentials file
source_globals	Source all global variable definitions here
init	Caller function; initializes all functionality
main	End-to-end renew of access keys for a specific profile in local awscli config

Module `keyup.cauth`

authentication	class def for generation and retention of a single set of credentials for generating key-report via a single iam user priviledges
convert	Convert days to hours
discover_account_affiliations	Associates each profile name in local awscli configuration
display_table	Print Table Object offset from left by tabspaces
expired_keys	Convert datetime objects into human readable
format_remaining	Formats days remaining value
print_header	Paints title header grid of a vpt Table
time_remaining	Calculate the days until expiration
`_postprocessing`	
setup_table	Renders Table containing data elements via cli stdout
source_globals	global environment variable definitions
truncate_fields	Truncates table field data to align with max column width
prepare_reportdata	Prints out key expiration info for all profilenames associated with the primary profilename given to access the account information

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CHAPTER 16

keyup Package

16.1 Module List

- *keyup.cauth module*
- *keyup.cli module*
- *keyup.colors module*
- *keyup.configuration module*
- *keyup.logd module*
- *keyup.help_menu module*
- *keyup.keyconfig module*
- *keyup.map module*
- *keyup.menu module*
- *keyup.statics module*
- *keyup.thread_progress module*
- *keyup.iam_operations module*
- *keyup.script_utils module*
- *keyup.list_ops module*
- *keyup.oscodes_unix module*
- *keyup.oscodes_win module*

16.2 keyup.cauth module

Key Report Generation Module:

- Centralized authentication module for producing Key Report
- Uses threading for concurrent processing

Module Functions:

- **convert:** Converts time units to hours
- **discover_account_affiliations:** maps awscli profile users to corresponding iam user ids
- **expired_keys:** determines if an access keyset is aged beyond max age value in keyup's configuration file
- **display_table:** renders vpt table to cli stdout

class keyup.cauth.**authentication**(*profile*)

Bases: `object`

class def for generation and retention of a single set of credentials for generating key-report via a single iam user priviledges

generate_token(*user*)

keyup.cauth.**convert**(*dt*)

Convert days to hours

keyup.cauth.**discover_account_affiliations**()

Associates each profile name in local awscli configuration to an iam username and an AWS Account Number

Returns: affiliation info, TYPE: dict

keyup.cauth.**display_skipped**(*iam_users*)

Display iam users exceptions skipped in the key report

keyup.cauth.**display_table**(*table*, *exceptions*, *tabspaces=4*)

Print Table Object offset from left by tabspaces

keyup.cauth.**expired_keys**(*dt*)

Convert datetime objects into human readable

keyup.cauth.**format_remaining**(*days: int*)

Formats days remaining value

Returns: days (int) with appropriate color, spacing format applied

keyup.cauth.**prepare_reportdata**(*debug=False*)

Prints out key expiration info for all profilenames associated with the primary profilename given to access the account information

keyup.cauth.**print_header**(*title*, *indent=4*, *spacing=4*)

Paints title header grid of a vpt Table

keyup.cauth.**setup_table**(*user_data*, *exception_list*)

Renders Table containing data elements via cli stdout

keyup.cauth.**source_globals**()

global environment variable definitions

`keyup.cauth.`**`spacing`**`(`*days*`)`

`keyup.cauth.`**`time_remaining`**`(`*dt*`)`
Calculate the days until expiration

`keyup.cauth.`**`truncate_fields`**`(`*element*`)`

Truncates table field data to align with max column width

Returns: truncated element, TYPE: dict or str

Module List

16.3 keyup.cli module

Summary: keyup (python3) | Scripted rotation of access keys for an IAM User.

- Display of key report showing key metadata
- Creation of new access keys
- Keyset installation in awscli local config
- Deletion of deprecated keyset

Author: Blake Huber Copyright Blake Huber, All Rights Reserved.

License: GNU General Public License v3.0 (GPL-3) Additional terms may be found in the complete license agreement: https://bitbucket.org/blakeca00/keyup/src/master/LICENSE.txt

OS Support:

- RedHat Linux, Amazon Linux, Ubuntu & variants
- Windows 7+

Dependencies:

- Requires python3, tested under py3.5 and py3.6

`class` `keyup.cli.`**`SetLogging`**`(`*mode*, *disable=False*`)`
Bases: `object`

Initializes project level logging

Args:

- **mode (str)**: log_mode, either ‘stream’ or ‘FILE’
- **disable (bool)**: when True, disables logging output

Returns: TYPE: bool, Success | Failure

`set``(`*mode*, *disable*`)`
create logger object, enable or disable logging

`keyup.cli.`**`clean_config`**`(`*quiet*`)`

Test local awscli config for Active temporary credentails

Args:

credentials_file (str) location of local awscli credentials file

config (configParser obj) GLOBAL object representing parsed awscli credentials file

Returns: TYPE: bool, Success | Failure

Note: Conditions when `clean_config` returns False (Failure):

If parsed_config contains **active credentials**, key rotation prohibited and keyup will exit.

If parsed_config contains **inactive credentials**, `clean_config` returns `bool True` and key rotation proceeds

`keyup.cli.`**`configure_keyset`**`(`*keyset*, *profile*, *surrogate=”*`)`

Parses local awscli config and reconfigures it with newly created access keys

Args:

keyset (json) access keys, newly created

profile (str) iam user alias in the local awscli config

surrogate (str) iam username on which access key operations are conducted by another iam user denoted in profile

Returns:

parsed (configParser) object configured with new access key signatures

configfile_path (str) os dependent path to awscli credentials file

access_key (str) sts access key string

secret_key (str) sts secret key string

`keyup.cli.`**`create_keyset`**`(`*iam_user*, *profile*, *surrogate=”*`)`

Creates new access key, secret key pair for iam user

Args:

- **access_key (str)**: AccessKeyId of the keyset to delete
- **profile (str)**: iam user alias in the local awscli config
- **surrogate (str): iam username on which access key operations** are conducted by another iam user denoted in profile

Returns: Success | Failure, TYPE: bool, aws access keys (dict)

`keyup.cli.`**`delete_keyset`**`(`*access_key*, *profile*, *surrogate=”*`)`

Deletes oldest access key credentials associated with a user

Args:

- **access_key (str)**: AccessKeyId of the keyset to delete
- **profile (str)**: iam user alias in the local awscli config
- **surrogate (str): iam username on which access key operations** are conducted by another iam user denoted in profile

Returns: TYPE: bool, Success | Failure

keyup.cli.**get_current_key**(*profile_name*, *surrogate=''*)

Extracts the STS AccessKeyId currently utilised in user's profile in the local awscli configuration

Args: profile_name: a username in local awscli profile

Returns: key_id (str): Amazon STS AccessKeyId

Raises: Exception if profile_name not found in config

keyup.cli.**help_menu**()

Displays help menu contents

keyup.cli.**init**()

Caller function; initializes all functionality

keyup.cli.**main**(*operation*, *profile*, *auto*, *debug*, *user_name=''*)

End-to-end renew of access keys for a specific profile in local awscli config

keyup.cli.**options**(*parser*, *help_menu=False*)

Parse cli parameter options

Returns: TYPE: argparse object, parser argument set

keyup.cli.**package_version**()

Prints package version and requisite PACKAGE info

keyup.cli.**parse_awscli**()

Parse, update local awscli config credentials

Args:

user (str) USERNAME, only required when run on windows os

Returns: TYPE: configparser object, parsed config file

keyup.cli.**precheck**()

Verify project runtime dependencies

keyup.cli.**remove_temporary_credentials**(*config_object*, *prefix=''*, *profiles=False*)

Filers temporary credentials from the list of profilenames present in the local awscli configuration

Args:

config_object (configParser object) object containing profilenames from the local awscli credentials file

prefix (str) any prefix prepended to profilenames to indicate temporary role credentials in the local awscli credentials file

profiles (bool) flag indicating return of a profilename list instead of

Returns: configParser object | profilename list (list)

keyup.cli.**set_keyset**(*access_key*, *secret_key*, *clear=False*)

Sets new access keys in memory to execute requests to Amazon APIs during rewrite of local awscli credentials filename

Args:

clear (bool) reset keys set as env variables, if present

`keyup.cli.`**`set_logging`**`(`*cfg_obj*`)`

Enable or disable logging per config object parameter

`keyup.cli.`**`shared_credentials_location`**`()`

Discover alterate location for awscli shared credentials file

Returns: TYPE: str, Full path of shared credentials file, if exists

`keyup.cli.`**`source_globals`**`()`

Source all global variable definitions here

`keyup.cli.`**`write_keyset`**`(`*configparser_obj*, *filename*, *debug=False*`)`

Write out new awscli credentials to local config

Args:

- **configparser_obj (configparser)**: parsed awscli config containing new keyset
- **filename (str)**: path to file to which keyset written
- **debug (bool)**: debug flag

Returns: TYPE: bool, Success | Failure

`keyup.cli.`**`write_keyset_backup`**`(`*keys*, *user*, *quiet*`)`

Writes newly created keyset to disk provided configuration file flag set:

Args:

keys New keyset object

quiet When set, supresses all output to stdout

Returns: TYPE: bool, Success | Failure

Module List

16.4 keyup.colors module

Summary: ANSI color and formatting code class See: http://www.lihaoyi.com/post/BuildyourownCommandLinewithANSIescapecodes.html#256-colors

Args: None

Returns: ansi codes

Raises: None. AttributeError if no code match returns the reset ansi codes

class `keyup.colors.`**`Colors`**

Bases: `object`

Class attributes provide different format variations

AQUA = '\x1b[38;5;14m'

BKGND_BLACK = '\x1b[40m'

BKGND_BLUE = '\x1b[44m'

BKGND_BRIGHT_BLACK = '\x1b[40;1m'

BKGND_BRIGHT_BLUE = '\x1b[44;1m'

BKGND_BRIGHT_CYAN = '\x1b[46;1m'

BKGND_BRIGHT_GREEN = '\x1b[42;1m'

BKGND_BRIGHT_MAGENTA = '\x1b[45;1m'

BKGND_BRIGHT_RED = '\x1b[41;1m'

BKGND_BRIGHT_WHITE = '\x1b[47;1m'

BKGND_BRIGHT_YELLOW = '\x1b[43;1m'

BKGND_CYAN = '\x1b[46m'

BKGND_GREEN = '\x1b[42m'

BKGND_MAGENTA = '\x1b[45m'

BKGND_RED = '\x1b[41m'

BKGND_WHITE = '\x1b[47m'

BKGND_WHITE_BOLD = '\x1b[47;1m'

BKGND_YELLOW = '\x1b[43m'

BLUE = '\x1b[94m'

BOLD = '\x1b[1m'

BRIGHTBLUE = '\x1b[38;5;51m'

BRIGHTCYAN = '\x1b[38;5;36m'

BRIGHTGREEN = '\x1b[38;5;95;38;5;46m'

BRIGHTPURPLE = '\x1b[38;5;68m'

BRIGHTRED = '\x1b[31;1m'

BRIGHTWHITE = '\x1b[38;5;15m'

BRIGHTYELLOW = '\x1b[38;5;11m'

BRIGHTYELLOW2 = '\x1b[38;5;95;38;5;226m'

BRIGHTYELLOWGREEN = '\x1b[38;5;95;38;5;155m'

CYAN = '\x1b[96m'

DARKBLUE = '\x1b[38;5;95;38;5;24m'

DARKCYAN = '\x1b[36m'

DARKGRAY1 = '\x1b[90m'

DARKGRAY2 = '\x1b[38;5;95;38;5;8m'

DARKGREEN = '\x1b[38;5;2m'

END = '\x1b[0m'

`GREEN = '\x1b[92m'`

`ITALIC = '\x1b[3m'`

`LT1GRAY = '\x1b[38;5;95;38;5;245m'`

`LT2GRAY = '\x1b[38;5;249m'`

`ORANGE = '\x1b[38;5;95;38;5;214m'`

`PURPLE = '\x1b[95m'`

`RED = '\x1b[91m'`

`RESET = '\x1b[0;0m'`

`REVERSE = '\x1b[;7m'`

`TITLE = '\x1b[4m\x1b[1m'`

`UNBOLD = '\x1b[22m'`

`UNDERLINE = '\x1b[4m'`

`URL = '\x1b[4m\x1b[96m'`

`WHITE = '\x1b[37m'`

`WHITEGRAY = '\x1b[38;5;95;38;5;250m'`

`YELLOW = '\x1b[93m'`

Module List

16.5 keyup.configuration module

Summary. local_config Module, creates local config file (json) to override default values set in statics module

Module Attributes:

- **current_config (TYPE str):** JSON object resulting from parsing an existing local config file. If no config file exists, object is the starting seed schema stored in statics module
- **config_file (TYPE str):** Path to local config file, usually found in ~/.config/PACKAGE/config.json
- **logger (TYPE logging obj):** system logger, output set by log_mode project-level attribute
- **user_home (TYPE str):** os-specific path to home directory determined in statics module

class keyup.configuration.**ReadConfig**(*local_file=”*)
Bases: object

read(*cfg=”*)
reads values from local config file

class keyup.configuration.**UpdateConfig**(*local_file*, *update=False*, *debug=False*)
Bases: object

Class def for parsing, update, and writing of local fs configuration file

assemble(*arg_dict*)
Summary.

Assembles new parameters in json format for write to new conf file

Returns:

local_config (json) json schema of configuration parameters to be written to local filesystem as new keyup configuration file

config_directory(*cfg*)
Checks config_path to ensure directories exist; if not create

preload_parameters(*current_config*)
Summary.

preloads existing configuration parameters or loads defaults if no preexisting local config file

print_header(*header*)
prints header strings to stdout

update(*cfg*, *debug=False*)
Summary.

updates values in local config file

Args:

cfg (configParser object) parsed local awscli credentials file

debug (boot) debug flag

Returns: TYPE: bool, update Success | Failure

write_config(*parameter_dict*, *cfg*)
create new config file

keyup.configuration.**converge_answer**(*question*, *choices*, *answer=”*)

Summary: prompt user for input until answer in appropriate responses received

Args:

answer (str) user response to question

choices (list) list of valid responses. Responses are strings

Returns:

valid answer (str) valid response from choices

keyup.configuration.**display_table**(*header*, *title=False*, *alignment=’c’*, *border=True*, *offset=45*, *tabspaces=4*, *color=’\x1b[94m’*)
Print Table Object offset from left by tabspaces

keyup.configuration.**exit_processing**(*code=None*, *clear=False*)
Reset terminal screen colors on exit

keyup.configuration.**expand_home_path**(*path*)
Substitute ~ for actual home path

keyup.configuration.**init**(*debug=False*, *cfg=None*)

Summary: Initiates read, write, or update of local_config file

Args:

debug (bool) debug flag

cfg (str) path to fs object containing project k,v config parameters

Returns: TYPE: bool, Success | Failure `keyup.configuration.`**`remove_trailing_slash`**`(`*path*`)`

Removes a trailing slash from provided fs path

`keyup.configuration.`**`set_writeable_location`**`(`*default_location*, *header*, *message*, *confirmation_msg*`)`

Summary:

- Takes user input for filesystem location.
- Tests to ensure location is writable
- Removes trailing slash (if applicable)

Args:

default_location (str) filesystem location if no user input

header (str) Header question/title to print prior to user input

message (str) Message to solicit user input

confirmation_msg (str) Display text after user input accepted

Returns:

fs_location (str) writeable filesystem path

`keyup.configuration.`**`validate_fs_location`**`(`*path*`)`

Summary: Validate existence of a path or create it

Args:

path (str)

Returns: Success | Failure, TYPE: bool

Module List

16.6 keyup.help_menu module

Help Menu Help menu object containing body of help content. For printing with formatting

Module List

16.7 keyup.keyconfig module

Summary: Display module of configuration file contents

`keyup.keyconfig.`**`display_content`**`(`*data_object*, *halt=False*`)`

Summary: Display contents of object correctly whether display on a terminal (tty) or redirected to a file

`keyup.keyconfig.`**`is_tty`**`()`

Summary: Determines if output is displayed to the screen or redirected

Returns: True if tty terminal | False is redirected, TYPE: bool `keyup.keyconfig.`**`option_configure`**`(`*debug=False*, *path=None*`)`

Summary: Initiate configuration menu to customize keyup runtime options. Console script `` `keyconfig` `` invokes this option_configure directly in debug mode to display the contents of the local config file (if exists)

Args:

path (str) full path to default local configuration file location

debug (bool) debug flag, when True prints out contents of local config file

Returns: TYPE (bool): Configuration Success | Failure

Module List

16.8 keyup.logd module

Summary: Project-level logging module

`keyup.logd.`**`getLogger`**`(`**args*, ***kwargs*`)`

Summary: custom format logger

Args: mode (str): The Logger module supprts the following log modes:

- log to console / stdout. Log_mode = 'stream'
- log to file
- log to system logger (syslog)

Returns: logging object | TYPE: logging singleton

`keyup.logd.`**`logprep`**`(`*mode*`)`

Summary: prerequisites for logging to file mode

Args:

mode (str) valid value is 'FILE'; parameter used for logging type validation only

Return: Success | Failure, TYPE: bool

`keyup.logd.`**`mode_assignment`**`(`*mode*`)`
Translates arg to enforce proper assignment

Module List

16.9 keyup.map module

Summary:

- Mapping Module
- maps profile names from local awscli to iam usernames in AWS Account

`keyup.map.`**`map_iam_username`**`(`*username*, *profilename*`)`

Summary: Triangulates if provided username is a profile name from local awscli configuration or an IAM username from AWS

Returns: IAM username (str)

`keyup.map.`**`map_identity`**`(`*profile*`)`

Summary: retrieves iam user info for profiles in awscli config

Args:

user (str) string, local profile user from which the current boto3 session object created

Returns:

iam_user (str) AWS iam user corresponding to the provided profile user in local config

Module List

16.10 keyup.menu module

Curses-menu

`keyup.menu.`**`main`**`()`

Builds main menu, branches to submenus

`keyup.menu.`**`selection_menu_example`**`()`

`keyup.menu.`**`submenu_backup`**`(`*menu_obj*`)`

`keyup.menu.`**`submenu_logging`**`(`*menu_obj*`)`

Module List

16.11 keyup.statics module

Summary.

keyup Project-level Defaults and Settings

- **Local Default Settings**: Local defaults for your specific installation are derived from settings found in:

```
~/.config/keyup/config.json
```

Module Attributes:

- **user_home (TYPE str):** $HOME environment variable, present for most Unix and Unix-like POSIX systems
- **config_dir (TYPE str):** directory name default for stsaval config files (.stsaval)
- **config_path (TYPE str):** default for stsaval config files, includes config_dir (~/.stsaval)
- **key_deprecation (TYPE str):** Deprecation logic that keyup uses when 2 keys exist for a user.

  2 values possible:

- 'AGE': keyup deprecates based on age, replacing the oldest key
- 'AWSCLI': keyup replaces keys currently in the local awscli config

`keyup.statics.`**`import_file_object`**(*filename*)

Summary: Imports block filesystem object

Args:

filename (str) block filesystem object

Returns: dictionary obj (valid json file), file data object

`keyup.statics.`**`os_parityPath`**(*path*)

Converts unix paths to correct windows equivalents. Unix native paths remain unchanged (no effect)

`keyup.statics.`**`read_local_config`**(*cfg*)

Parses local config file for override values

Args:

local_file (str) filename of local config file

Returns: dict object of values contained in local config file

Module List

16.12 keyup.thread_progress module

class `keyup.thread_progress.`**`ProgressBarThread`**(*label='Working'*, *delay=0.1*, *cycles=500*)

Bases: `threading.Thread`

`run`()

Method representing the thread's activity.

You may override this method in a subclass. The standard run() method invokes the callable object passed to the object's constructor as the target argument, if any, with sequential and keyword arguments taken from the args and kwargs arguments, respectively.

`start`()

Start the thread's activity.

It must be called at most once per thread object. It arranges for the object's run() method to be invoked in a separate thread of control.

This method will raise a RuntimeError if called more than once on the same thread object.

`stop`()

class `keyup.thread_progress.`**`SpinnerThread`**(*label='Working'*, *delay=0.2*)

Bases: `threading.Thread`

`run`()

Method representing the thread's activity.

You may override this method in a subclass. The standard run() method invokes the callable object passed to the object's constructor as the target argument, if any, with sequential and keyword arguments taken from the args and kwargs arguments, respectively.

start()

Start the thread's activity.

It must be called at most once per thread object. It arranges for the object's run() method to be invoked in a separate thread of control.

This method will raise a RuntimeError if called more than once on the same thread object.

stop()

Module List

16.13 keyup.iam_operations module

Summary.

Prints iam usernames from local awscli configuration. A usernames may be omitted from the output simply by listing them with a space between them after the call:

```
$ python3 iam_users.py default
```

Returns:

Will return all iam usernames in the local configuration except the default user (username "default")

keyup.iam_operations.**awscli_profiles**(*conf*)

Summary.

Returns IAM usernames from local awscli configuration

keyup.iam_operations.**create_userlist**(*content*, *exclusions*)

Summary: Return usernames from configParser object if not in the exclusion list

Args: content (configParser object): local awscli credentials file parsed content exclusions (list): profilenames to be excluded from return

Returns: list of profile names from localhost awscli configuration

keyup.iam_operations.**iam_users**(*profile*)

keyup.iam_operations.**local_profilenames**(*exceptions=[]*)

keyup.iam_operations.**print_profiles**(*config*, *args*)

Execution when no parameters provided

keyup.iam_operations.**shared_credentials_location**()

Summary: Discover alterate location for awscli shared credentials file

Returns: TYPE: str, Full path of shared credentials file, if exists

keyup.iam_operations.**temporary_profilenames**(*conf*, *exclusions=[]*)

Summary: Return usernames from configParser object which represent temporary (iam role) credentials

Args:

conf (str) path to awscli credentials file

exclusions (list) profilenames to be excluded from return

Returns: temporary profile names (role names) from localhost awscli configuration TYPE: str

Module List

16.14 keyup.list_ops module

Summary. List iam keyset operations (read-only)

`keyup.list_ops.`**`list_keys`**(*account*, *profile*, *iam_user*, *surrogate=''*, *stage=None*, *quiet=False*)

Summary. Displays iam user available access keys

Args:

account (str) AWS account number

profile (str) name of the iam user for which we are interrogating keys

iam_user (str) name of the iam user which corresponds to profile name from local awscli configuration

surrogate (str) name of profile user used to execute key operations in place of the profile user

stage (str) stage of key rotation; ie, either BEFORE | AFTER rotation

quiet (bool) No output to stdout (True) | Show output (False)

Returns: TYPE: list, AccessKeyIds listed for the IAM user

`keyup.list_ops.`**`query_keyinfo`**(*account*, *profile*, *surrogate=''*, *quiet=False*)

Summary. boto3 client instantiation and error handling

Args:

account (str) AWS account number

profile (str) name of the iam user for which we are interrogating keys

surrogate (str) name of profile user used to execute key operations in place of the profile user

quiet (bool) No output to stdout (True) | Show output (False)

Returns: boto3 response, TYPE: dict

Module List

16.15 keyup.script_utils module

Command-line Interface (CLI) Utilities Module

Module Functions:

- **bool_assignment:** set bool depending up user answer from stdin
- **config_init:** Initializes config file if none exists
- **debug_mode:** Provide additional log output for debugging
- **read_local_config:** parse local config file

`keyup.script_utils.`**`bool_assignment`**(*arg*, *patterns=None*)

Summary: Enforces correct bool argment assignment

Arg:

arg (*) arg which must be interpreted as either bool True or False

Returns: bool assignment | TYPE: bool

`keyup.script_utils.`**`config_init`**(*config_file*, *json_config_obj*, *config_dirname=None*)

Summary: Creates local config from JSON seed template

Args:

config_file (str) filesystem object containing json dict of config values

json_config_obj (json) data to be written to config_file

config_dirname (str) dir name containing config_file

Returns: TYPE: bool, Success | Failure

`keyup.script_utils.`**`debug_mode`**(*header*, *data_object*, *debug=False*, *halt=False*)
debug output

`keyup.script_utils.`**`import_file_object`**(*filename*)

Summary: Imports block filesystem object

Args:

filename (str) block filesystem object

Returns: dictionary obj (valid json file), file data object

`keyup.script_utils.`**`read_local_config`**(*cfg*)
Parses local config file for override values

Args:

local_file (str) filename of local config file

Returns: dict object of values contained in local config file

Module List

16.16 keyup.oscodes_unix module

Standard OS Module Exit Codes

- See https://docs.python.org/3.6/library/os.html#process-management

Module Attributes:

- exit_codes (dict): exit error codes for Unix, Linux

Module List

16.17 keyup.oscodes_win module

Standard OS Module Exit Codes

- See https://docs.python.org/3.6/library/os.html#process-management

Module Attributes:

- exit_codes (dict): exist error codes for Microsoft Windows

Module List

Table Of Contents

CHAPTER 17

Current Release

17.1 v1.3.0 | Release Notes

Release date: November 1, 2022

Enhancement & Bug Fix release

17.1.1 Features, v1.3.0

- **Prompt Toolkit v3 Compatibility Enhancement**:
  - Upgraded code for dependency to utilise a queue in threaded operations. This is required for compatibility with (current version as of this writing).
  - **Note**: Since this upgrade breaks backward compatibility with prompt-toolkit v2 used in keyup version 1.2.X, only keyup version 1.3+ may be used with prompt-toolkit v3.X installed on your local machine.

17.1.2 Maintenance, v1.3.0

- Resolved :
  - Issue resulted from broken forward compatibility with Amazon Web Services' application programming interface (API) that evolved during the last 2 years as API enhancements were made.
  - Defect caused keyup to create a second Identity & Access Management (IAM) access key instead of renewing the existing access key.
  - Although this error was isolated only to IAM users with a single access key, this issue breaks the major use case for keyup (rotation of a single IAM access key). Issue did not affect key rotation operations for IAM users with 2 registered IAM access keys. Since users with 2 access keys would not have noticed any problems with keyup, this led to a wider misconception that was transient.

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CHAPTER 18

Release History

Keyup Release Version	Date
	November 1 , 2022
	November 29, 2020
	January 1, 2020
	Sept 25, 2019
	August 22, 2019
	August 13, 2019
Release 1.1.16	August 10, 2019
	August 3, 2019
	July 21, 2019
	July 19, 2019
	June 1, 2019
	May 29, 2019
	April 25, 2019
	April 5, 2019
	April 2, 2019
	March 26, 2019
	March 24, 2019
	March 19, 2019
	March 17, 2019
	February 10, 2019
	January 23, 2019
	January 02, 2019
	May 20, 2018
	April 07, 2018
	January 22, 2018
	January 19, 2018
	January 06, 2018
	January 02, 2018
	December 30, 2017

CHAPTER 19

Release Note Index

19.1 v1.2.8 | Release Notes

Release date: November 29, 2020

Maintenance Release

19.1.1 Maintenance & Bug Fix, v1.2.8

- **Logging via Syslog**: Fixed errors when enabling syslog monitoring on , , and .

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19.2 v1.2.6 | Release Notes

Release date: January 1, 2020

Maintenance Release

19.2.1 Maintenance & Bug Fix, v1.2.6

- **Python Dependency Reduction**: Removed dependency on Python module *tqdm* in favor of prompt-toolkit alternative.

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19.3 v1.2.5 | Release Notes

Release date: September 25, 2019

Maintenance Release

19.3.1 Maintenance & Bug Fix, v1.2.5

- **Python 3.8 Preparation**: Python3 Standard library functionality set to be deprecated in eliminated and replaced with 3rd party module, .
- **Python Dependency Versioning**: Minimum dependency versions incremented and tested for the following libraries:
  - ()
  - ()

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19.4 v1.2.2 | Release Notes

Release date: August 22, 2019

Maintenance Release

19.4.1 Maintenance & Bug Fix, v1.2.2

- **Post-installation Artifact Placement** resolve post-installation artifact issues with `iam_users.py`
- **Surrogate user-name Fix**: Surrogate user_name functionality fixed. Previous to this release, `--user-name` option would not allow another an admin user to rotate access keys of a subordinate user (with lesser privileges) as designed.

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19.5 v1.2.0 | Release Notes

Release date: August 13, 2019

Performance, Reliability, & Stability release

19.5.1 Performance & Stability, v1.2.0

- **Extensive installation testing** from pypi to resolve post-installation artifact issues.
- **sudo/ root user installation**: testing resulted in extensive refactor of `setup.py` and other installation artifacts
- is now the default format for all included documentation for keyup deployments, replacing markdown README and other documnetation in this format.
- **common.py**: new commons (as in "common functionality") module introduced in this release. This is part of the deprecation movement for `script_utils.py` module.

19.5.2 Reliability, v1.2.0

- A runtime test to ensure system logger is enabled and functional added in this release. Prevents catastrophic exception failures when keyup is used in a Docker container or LXC environment.
- Applies to the following linux system loggers:
  –
  –

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19.6 v1.1.15 | Release Notes

Release date: August 3, 2019

Maintenance release

19.6.1 Maintenance, v1.1.15

- Anchor `libtools` python library () to a version 0.2+.
- Refactor imports to accommodate minor changes upstream (libtools).

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19.7 v1.1.14 | Release Notes

Release date: July 21, 2019

Maintenance release

19.7.1 Maintenance, v1.1.14

- Re-implemented `libtools` python library (pypi registry,) . Previous installation errors in this library dependency have been fixed as of v0.1.10.
- Refactor of statics module, `statics.py` to include all dependent functionality.

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19.8 v1.1.13 | Release Notes

Release date: July 19, 2019

Maintenance release

19.8.1 Maintenance, v1.1.13

- Implemented fix for failing test 3 in test module `test_keyset_operations`.
- Partial implementation of `libtools` python library (pypi registry,) .
- Refactor of logging module, `logd.py`. This module to be included for generic use in `libtools` i/o tools library in the near future.

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19.9 v1.1.12 | Release Notes

Release date: June 1, 2019

Maintenance release

19.9.1 Maintenance, v1.1.12

- Implemented fix for Ubuntu 18.04 / Ubuntu 18.10 indexing of python3 post install artifacts relative to python's home directory.
- `setup.py`: Update to post install logic to ensure bash completion artifacts placed correctly by *data_files* operation.

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19.10 v1.1.11 | Release Notes

Release date: May 29, 2019

Maintenance release

19.10.1 Maintenance, v1.1.11

- Key Report output table formatting and alignment improvements
- `setup.py`: Update to home directory determination to ensure multi-platform compatibility

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19.11 v1.1.10 | Release Notes

Release date: April 25, 2019

Maintenance release

19.11.1 Maintenance, v1.1.10

- Some IAM usernames were skipped in the key report bc of authentication problems; updated key report to name iam usernames excluded from the report to avoid confusion.

19.11.2 Documentation, v1.1.10

- Added IAM Permissions section outlining required permissions for keyup functionality

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19.12 v1.1.8 | Release Notes

Release date: April 5, 2019

Documentation Release

19.12.1 Maintenance, v1.1.8

- None

19.12.2 Documentation, v1.1.8

- Updated Sphinx configuration with *autosummary* extension, added Code Summary Index section.

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19.13 v1.1.7 | Release Notes

Release date: April 2, 2019

Maintenance Release

19.13.1 Maintenance, v1.1.7

- Bug Fix update, correction for updated color codes in .

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19.14 v1.1.5 | Release Notes

Release date: March 26, 2019

Documentation Release

19.14.1 Documentation, v1.1.5

- Various restructuredtext updates to support readthedocs.io

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19.15 v1.1.3 | Release Notes

Release date: March 24, 2019

Documentation Release

19.15.1 Documentation, v1.1.3

- Multiple updates, Key Report section.
- now enabled with the library for richer syntax highlight effects.

19.15.2 Maintenance, v1.1.3

- Test Modules: Fixed automated test failures resulting from refactoring in Release 1.1.0

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19.16 v1.1.0 | Release Notes

Release date: March 17, 2019

Feature Release

19.16.1 Features, v1.1.0

- Key Report added.
- New documentation section detailing Key Report use and content.
- Python3 for asynchronous processing.

19.16.2 Maintenance, v1.1.0

- **Module Size Reductions**:
  - Lengthy modules separated into a series smaller modules to increase maintainability.

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19.17 v1.0.6 | Release Notes

Release date: February 10, 2019

Maintenance Release

19.17.1 Features, v1.0.6

- N/A

19.17.2 Maintenance, v1.0.6

- **setup.py**:
  - add valid_os_shell method to PostInstall Class to prohibit execution of post install unless *nix + bash shell environment.
  - pin python dependencies to version number
- **Post-Commit Hook**:
  - fixed git functionality when triggered via post-commit hook
  - See hooks/ directory in official git repository for code example
- **Bug Fix, Various**

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19.18 v1.0.5 | Release Notes

Release date: January 23, 2019

Maintenance Release

19.18.1 Features, v1.0.5

- N/A

19.18.2 Maintenance, v1.0.5

- **Dropped Python 3.5 Support**: Python 3.6 feature elements such as f-strings prohibit compatibility with Python 3.5
- **Bug Fix, Various**: Issue 34 resolved.

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19.19 v1.0.1 | Release Notes

Release date: January 2, 2019

Feature + Maintenance Release

19.19.1 Features, v1.0.1

- **Bash Autocompletion**: Pressing <tab><tab> when used on Linux under Bash shell will autocomplete command line parameters.
- When using `--profile` or `--user-name` command-line options, bash completion displays iam username from the local cli configuration.

19.19.2 Maintenance, v1.0.1

- **Exception tqdm module**: Fixed exception thrown by current (v4.27.0+) versions of tqdm module under Linux

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19.20 v0.9.8 | Release Notes

Release date: May 20, 2018

Maintenance Release

19.20.1 Features, v0.9.8

- **Configuration Menu**: Rework of configuration menu to provide error-free functionality on windows platform
- **Automated Tests**: Updates to automated pretest setup

19.20.2 Fixed, v0.9.8

- **Various Bug Fixes**: Fixed various minor issues

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19.21 v0.9.6 | Release Notes

Release date: April 7, 2018

19.21.1 Features, v0.9.6

- **Backup Copy of New Keysets:** If set in the configuration file, `keyup` will write all newly generated keysets to both the local awscli configuration as well as a backup filesystem location on disk.

19.21.2 Fixed, v0.9.6

- **Local Configuration File Deletion:** some previous installations of `keyup` versions experience premature deletion of the local configuration file located at:

  ```
  ~/.config/key/config.json
  ```

  Upgrading to version **0.9.6** will remedy this problem; after which you should regenerate the local configuration file by executing:

  ```
  $ keyup --configure
  ```

- **Various Bug Fixes**: Fixed various minor issues

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19.22 v0.9.1 | Release Notes

Release date: Jan 22, 2018

19.22.1 Features, v0.9.1

- **Awareness of STS Temporary Credentials.** `keyup` is now temporary-credential aware in that it will detect when the local awscli config contains temporary credentials. If it does, keyup will test up to 2 profiles to determine if the credentials are currently ACTIVE. If ACTIVE, key rotation will not be be permitted. If temp credentials are inactive, key operations proceed normally. When writing to the local config, keyup can keyup can interrupt automated jobs utilising temporary credentials.
- **Console Script: for displaying local config file contents.** Console script `keyconfig` can now be used to display the contents of The local configuration file, if one exists. If the local config file does not exist yet because the user has not yet to run the configuration menu, then a message informing the user how to generate a local configure is displayed.
- **Documentation: FAQ.** Full Frequently Asked Questions section on readthedocs completed and available.
- **Improved Exception Handling** `keyup` now handles IAM usernames that do not exist more gracefully during list-keys or key rotation operations.

19.22.2 Fixed, v0.9.1

- **Various Bug Fixes**: Fixed various minor issues
- **IAM User Reporting Inaccuracies**: Previously reporting IAM Usernames as 'None'

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19.23 v0.8.12 | Release Notes

Release date: Jan 19, 2018

19.23.1 Features, v0.8.12

- **Conduct key operations for another user (–user-name Parameter)** Profile user can be used to list or rotate keys for another user given in the –user-name parameter. This enables key operations when a profile is not represented in the local awscli configuration.
- **Key Age Hooks: Hooks put in place for keyup rotate functionality when key age is between** key_min age and key_max age. Beneficial for automated (ie, scheduled) key rotation so that keys only refreshed when older than the min age. Avoids premature key rotation when executing in automated mode via scheduler.

19.23.2 Fixed, v0.8.12

- **Configuration Script**: Fixed issues resolving answers to configuration questionnaire
- **Key Age Inaccuracies**: Fixed key age across multi-day periods. Now accurate.

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19.24 v0.8.8 | Release Notes

Release date: Jan 06, 2018

19.24.1 Features

- **List Keys Report**: Enhanced with Key Age, formatted, human-readable CreateDate.
- **Documentation Updates**: more complete documentation with release notes

19.24.2 Fixed

- **Configuration Script**: Additional issues fixed with configuration questionnaire, which now interprets answers multiple dimension, including a case-insensitive manner.
- **Stdout Formatting**: New facility to frame and format messages to stdout.

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19.25 v0.8.7 | Release Notes

Release date: Jan 02, 2018

19.25.1 Features, v0.8.7

- **Auto Mode**: Auto mode initiated with the *–auto* switch will silence all output to stdout.

19.25.2 Fixed, v0.8.7

- **Configuration Script**: Configuration questionnaire initiated by *keyup –configure* had many issues, most now fixed.

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19.26 v0.8.3 | Release Notes

Release date: Dec 30, 2017

19.26.1 Documentation Release

- **ReadTheDocs.io**: Initial sphinx auto document generation, release to: http://keyup.readthedocs.io.

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