cvssc

Common Vulnerability Scoring System Calculator

v0.1.0

https://github.com/DrakeAxelrod/cvssc

Created by **Drake Axelrod**

Summary

This package provides a set of functions for parsing CVSS strings and vectors. It includes functions for converting CVSS strings to dictionaries, dictionaries to strings, and calculating CVSS scores from dictionaries. The package also includes functions for converting strings to vectors and vectors to strings. The package is designed to be used with the Typst programming language. ,

cvssc.calc

This function calculates transforms a CVSS string or dictionary into a dictionary with various metrics, including the base score and severity. The input must be a valid CVSS string or dictionary. this function is a wrapper for the v2, v3, and v4 functions. and will automatically determine the version of the input.

```
cvssc.calc("CVSS:4.0/AV:N/AC:L/AT:N/PR:N/
UI:N/VC:N/VI:N/VA:N/SC:N/SI:N/SA:N")
```

```
(
  version: "4.0",
  vector-string: "CVSS:4.0/AV:N/AC:L/AT:N/PR:N/UI:N/VC:N/VI:N/VA:N/SC:N/SI:N/SA:N/CR:H/IR:H/AR:H/E:A",
  attack-vector: "NETWORK",
  attack-complexity: "LOW",
  attack-requirements: "NONE",
  privileges-required: "NONE",
  user-interaction: "NONE",
  confidentiality-impact: "NONE",
  integrity-impact: "NONE",
  availability-impact: "NONE",
  exploit: "ATTACKED",
  confidentiality-requirements: "HIGH",
  integrity-requirements: "HIGH",
  availability-requirements: "HIGH",
  base-score: 0.0,
  base-severity: "NONE",
  metrics: (
    AV: "N",
    AC: "L",
    AT: "N",
    PR: "N",
    UI: "N",
    VC: "N",
    VI: "N",
    VA: "N",
    SC: "N",
    SI: "N",
    SA: "N",
  ),
  specification-document: "https://www.first.org/cvss/v4.0/specification-document",
)
```

```
cvssc.calc((
  version: "3.1",
  metrics: (
    "AV": "N",
    "AC": "L",
    "PR": "N",
    "UI": "N",
    "S": "U",
    "C": "N",
    "I": "N",
    "A": "N"
  )
))
```

```
(
  version: "3.1",
  vector-string: "CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:N",
  attack-vector: "NETWORK",
  attack-complexity: "LOW",
  privileges-required: "NONE",
  user-interaction: "NONE",
  scope: "UNCHANGED",
  confidentiality-impact: "NONE",
  integrity-impact: "NONE",
  availability-impact: "NONE",
  base-score: 3.9,
  base-severity: "LOW",
  metrics: (
    AV: "N",
    AC: "L",
    PR: "N",
    UI: "N",
    S: "U",
    C: "N",
    I: "N",
    A: "N",
  ),
  specification-document: "https://www.first.org/cvss/v3.1/specification-document",
)
```

Parameters

`calc(vec: string) -> dictionary`

vec `string`

The CVSS string or dictionary to convert.

cvssc.get-version

This function extracts the version from a CVSS string. The input must be a string in the format: `CVSS:([0-9.]+)/(.+)`

```
cvssc.get-version("CVSS:3.0/AV:N/AC:L/PR:N/
UI:N/S:U/C:N/I:N/A:N")
```

```
3.0
```

Parameters

`get-version(input: string) -> string`

input `string`

The CVSS string.

cvssc.kebab-case

This function converts a string from camelCase to kebab-case. The input must be a string.

```
cvssc.kebab-case("helloWorld")
```

```
hello-world
```

Parameters

`kebab-case(string: string) -> string`

string `string`

The string to convert.

cvssc.kebabify-keys

This function converts the keys of a dictionary from camelCase to kebab-case. The input must be a dictionary.

```
cvssc.kebabify-keys((
  "somethingElse": "else",
  "anotherThing": "thing",
  "helloWorld": "world"
))
```

```
(
  something-else: "else",
  another-thing: "thing",
  hello-world: "world",
)
```

Parameters

`kebabify-keys(input: dictionary) -> dictionary`

input `dictionary`

The dictionary to convert.

cvssc.str2vec

This function converts a CVSS string into a dictionary. The input must be a string in the format: `CVSS:([0-9.]+)/(.+)`

```
cvssc.str2vec("CVSS:3.0/AV:N/AC:L/PR:N/
UI:N/S:U/C:N/I:N/A:N")
```

```
(
  version: "3.0",
  metrics: (
    AV: "N",
    AC: "L",
    PR: "N",
    UI: "N",
    S: "U",
    C: "N",
    I: "N",
    A: "N",
  ),
)
```

Parameters

`str2vec(s: string) -> dictionary`

s `string`

The CVSS string to convert.

cvssc.v2

This function calculates transforms a CVSS string or dictionary into a dictionary with various metrics, including the base score and severity. The input must be a valid CVSS string or dictionary. the format for the dictionary is (version: “2.0”, metrics: (...))

```
cvssc.v2("CVSS:2.0/AV:L/AC:L/Au:N/C:C/I:C/
A:C")
```

```
(
  version: "2.0",
  vector-string: "CVSS:2.0/AV:L/AC:L/Au:N/C:C/I:C/A:C",
  access-vector: "LOCAL",
  access-complexity: "LOW",
  authentication: "NONE",
  confidentiality-impact: "COMPLETE",
  integrity-impact: "COMPLETE",
  availability-impact: "COMPLETE",
  base-score: 7.2,
  metrics: (AV: "L", AC: "L", Au: "N", C: "C", I: "C", A: "C"),
  base-severity: "HIGH",
  specification-document: "https://www.first.org/cvss/v2/guide",
)
```

Parameters

`v2(vec: string) -> dictionary`

vec `string`

The CVSS string or dictionary to convert.

cvssc.v3

This function calculates transforms a CVSS string or dictionary into a dictionary with

various metrics, including the base score and severity. The input must be a valid CVSS string or dictionary. the format for the dictionary is (version: “2.0”, metrics: (...))

```
cvssc.v3("CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/
C:N/I:N/A:N")
```

```
(
  version: "3.0",
  vector-string: "CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:N",
  attack-vector: "NETWORK",
  attack-complexity: "LOW",
  privileges-required: "NONE",
  user-interaction: "NONE",
  scope: "UNCHANGED",
  confidentiality-impact: "NONE",
  integrity-impact: "NONE",
  availability-impact: "NONE",
  base-score: 3.9,
  base-severity: "LOW",
  metrics: (
    AV: "N",
    AC: "L",
    PR: "N",
    UI: "N",
    S: "U",
    C: "N",
    I: "N",
    A: "N",
  ),
  specification-document: "https://www.first.org/cvss/v3.0/specification-document",
)
```

```
cvssc.v3("CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/
C:N/I:N/A:N")
```

```
(
  version: "3.1",
  vector-string: "CVSS:3.1/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:N",
  attack-vector: "NETWORK",
  attack-complexity: "LOW",
  privileges-required: "NONE",
  user-interaction: "NONE",
  scope: "UNCHANGED",
  confidentiality-impact: "NONE",
  integrity-impact: "NONE",
  availability-impact: "NONE",
  base-score: 3.9,
  base-severity: "LOW",
  metrics: (
    AV: "N",
    AC: "L",
    PR: "N",
    UI: "N",
    S: "U",
    C: "N",
    I: "N",
    A: "N",
  ),
  specification-document: "https://www.first.org/cvss/v3.1/specification-document",
)
```

Parameters

`v3(vec: string) -> dictionary`

vec `string`

The CVSS string or dictionary to convert.

cvssc.v4

This function calculates transforms a CVSS string or dictionary into a dictionary with various metrics, including the base score and severity. The input must be a valid CVSS string or dictionary. the format for the dictionary is (version: “2.0”, metrics: (...))

```
cvssc.v4("CVSS:4.0/AV:N/AC:L/AT:N/PR:N/
UI:N/VC:N/VI:N/VA:N/SC:N/SI:N/SA:N")
```

Parameters

`v4(vec: string) -> dictionary`

vec `string`

The CVSS string or dictionary to convert.

cvssc.vec2str

This function converts a CVSS dictionary into a string. The input must be a dictionary in the format: `(version: "version", metrics: (...))`

```
cvssc.vec2str((
  version: "3.0",
  metrics: (
    "AV": "N", "AC": "L",
    "PR": "N", "UI": "N",
    "S": "U",  "C": "N",
    "I": "N", "A": "N"
  )
))
```

```
CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:N
```

Parameters

`vec2str(vec: dictionary) -> string`

vec `dictionary`

The CVSS dictionary to convert.

cvssc.first

The First Organization url.

```
#cvssc.first
```

```
https://www.first.org/
```

cvssc.specifications

The First CVSS specification document urls. (2.0, 3.0, 3.1, 4.0)

```
#cvssc.specifications
```

```
(
  "2.0": "https://www.first.org/cvss/v2/guide",
  "3.0": "https://www.first.org/cvss/v3.0/specification-document",
  "3.1": "https://www.first.org/cvss/v3.1/specification-document",
  "4.0": "https://www.first.org/cvss/v4.0/specification-document",
)
```

```
#cvssc.specifications.at("3.0")
```

https://www.first.org/cvss/v3.0/specification-document

```
#link(
  cvssc.specifications.at("3.1"),
  "CVSSv3.1 Specification"
)
```

CVSSv3.1 Specification

cvssc.version

The version of this package.

```
#cvssc.version
```

0.1.0