DNScode 1.6.4

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1 DNScode

1.1 Simplifying DNS Zone management

1.2 About

DNScode is a project to help simplify DNS zone management, when using plain text files with servers like BIND and NSD. It provides a framework for programmatically generating zone files with Python, allowing for more flexability, compared to other DNS as code solutions.

1.3 Installation

```
bash
# Create working directory
mkdir dnsproject
cd dnsproject
# Create virtual envrionment (optional, but highly recomended)
python3 -m venv .venv
source .venv/bin/activate
# Install the dnscode package
pip install dnscode
```

1.4 Usage

Import the dnscode package into a python script, create a zone object, then add records into the zone. Records can be added either via helper functions in the dnscode.Zone class, or by manually creating record objects and adding them through dnscode.Zone.add(). Both methods are shown in the example below.

Once the zone is setup, you can save it as a text file using dnscode.Zone.save_file(). Currently, it also outputs to to STDOUT. See https://code.minecraftchest1.us/minecraftchest1/dnscode/issues/5
for details.

API docs at https://dnscode.minecraftchest1.us/classdnscode_1_1dnscode_1_1Zone

2 Namespace Index

2.1 Package List

Here are the packages with brief descriptions (if available):

dnscode 4
dnscode.dnscode 4

3 Hierarchical Index

3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically: Exception

dnscode.dnscode.InvalidDataException 7
dnscode.dnscode.Record 10
dnscode.dnscode.A 4
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4 Class Index 3

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6 Namespace Documentation

6.1 dnscode Namespace Reference

Namespaces

• namespace dnscode

6.2 dnscode.dnscode Namespace Reference

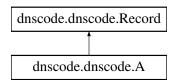
Classes

- class A
- class AAAA
- class CNAME
- class InvalidDataException
- class MX
- class NS
- class PTR
- class Record
- class SOA
- class SRV
- class TXT
- class Zone

7 Class Documentation

7.1 dnscode.dnscode.A Class Reference

Inheritance diagram for dnscode.dnscode.A:



Public Member Functions

• __init__ (self, str name='@', int ttl=3600, str host='0.0.0.0')

Public Member Functions inherited from dnscode.dnscode.Record

• __str__ (self)

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

- str rclass = 'IN'
- str rtype = 'A'
- str name = '@'
- str data = '0.0.0.0'
- int ttl = 3600

7.1.1 Detailed Description

```
Represents an 'A' (IPv4 address) record.
```

7.1.2 Constructor & Destructor Documentation

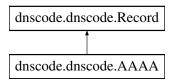
```
__init__()
```

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.2 dnscode.dnscode.AAAA Class Reference

Inheritance diagram for dnscode.dnscode.AAAA:



Public Member Functions

```
• __init__ (self, str name='@', int ttl=3600, str host='0.0.0.0')
```

Public Member Functions inherited from dnscode.dnscode.Record

__str__ (self)

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

```
str rclass = 'IN'
str rtype = 'A'
str name = '@'
str data = '0.0.0.0'
int ttl = 3600
```

7.2.1 Detailed Description

```
Represents an 'AAAA' (IPv6 address) record.
```

7.2.2 Constructor & Destructor Documentation

```
int ttl = 3600,

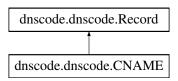
str host = '0.0.0.0')
```

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.3 dnscode.dnscode.CNAME Class Reference

Inheritance diagram for dnscode.dnscode.CNAME:



Public Member Functions

• __init__ (self, str name='@', int ttl=3600, str host='example.com')

Public Member Functions inherited from dnscode.dnscode.Record

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

```
str rclass = 'IN'
str rtype = 'A'
str name = '@'
str data = '0.0.0.0'
int ttl = 3600
```

7.3.1 Detailed Description

__init__()

```
Represents a 'CNAME' (Canonical Name) record.
```

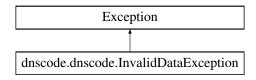
7.3.2 Constructor & Destructor Documentation

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.4 dnscode.dnscode.InvalidDataException Class Reference

Inheritance diagram for dnscode.dnscode.InvalidDataException:



Public Member Functions

__init__ (self, message)

Public Attributes

• message = message

7.4.1 Detailed Description

Exception raised when invalid data is passed to a record.

7.4.2 Constructor & Destructor Documentation

7.4.3 Member Data Documentation

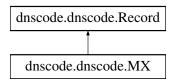
message

dnscode.dnscode.InvalidDataException.message = message
The documentation for this class was generated from the following file:

• src/dnscode/dnscode.py

7.5 dnscode.dnscode.MX Class Reference

Inheritance diagram for dnscode.dnscode.MX:



Public Member Functions

• init (self, str name='@', int ttl=3600, int priority=10, str host='example.com')

Public Member Functions inherited from dnscode.dnscode.Record

__str__ (self)

Public Attributes

- priority = priority
- host = host

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

```
str rclass = 'IN'
str rtype = 'A'
str name = '@'
str data = '0.0.0.0'
int ttl = 3600
```

7.5.1 Detailed Description

```
Represents an 'MX' (Mail Exchange) record.
```

7.5.2 Constructor & Destructor Documentation

7.5.3 Member Data Documentation

host

```
dnscode.dnscode.MX.host = host
```

priority

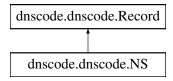
```
dnscode.dnscode.MX.priority = priority
```

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.6 dnscode.dnscode.NS Class Reference

Inheritance diagram for dnscode.dnscode.NS:



Public Member Functions

• __init__ (self, str name='@', int ttl=3600, str host='example.com')

Public Member Functions inherited from dnscode.dnscode.Record

```
• __str__ (self)
```

Public Attributes

• host = host

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

```
str rclass = 'IN'
str rtype = 'A'
str name = '@'
str data = '0.0.0.0'
int ttl = 3600
```

7.6.1 Detailed Description

```
Represents an 'NS' (Name Server) record.
```

7.6.2 Constructor & Destructor Documentation

7.6.3 Member Data Documentation

host

__init__()

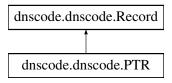
```
dnscode.dnscode.NS.host = host
```

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.7 dnscode.dnscode.PTR Class Reference

Inheritance diagram for dnscode.dnscode.PTR:



Public Member Functions

• __init__ (self, str name='@', int ttl=3600, str host='example.com')

Public Member Functions inherited from dnscode.dnscode.Record

```
• __str__ (self)
```

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

```
str rclass = 'IN'
str rtype = 'A'
str name = '@'
str data = '0.0.0.0'
int ttl = 3600
```

7.7.1 Detailed Description

```
Represents a 'PTR' (Pointer) record.
```

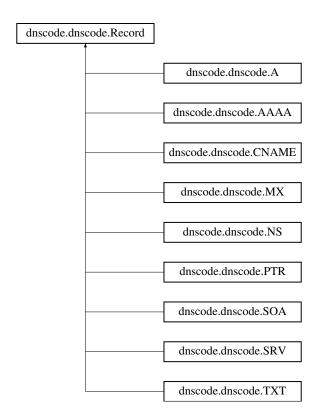
7.7.2 Constructor & Destructor Documentation

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.8 dnscode.dnscode.Record Class Reference

Inheritance diagram for dnscode.dnscode.Record:



Public Member Functions

• __str__ (self)

Static Public Attributes

- str rclass = 'IN'
- str rtype = 'A'
- str name = '@'
- str data = '0.0.0.0'
- int ttl = 3600

7.8.1 Detailed Description

Base class for DNS records.

7.8.2 Member Function Documentation

Returns a string representation of the record.

7.8.3 Member Data Documentation

data

str dnscode.dnscode.Record.data = '0.0.0.0' [static]

name

```
str dnscode.dnscode.Record.name = '@' [static]
```

rclass

```
str dnscode.dnscode.Record.rclass = 'IN' [static]
```

rtype

```
str dnscode.dnscode.Record.rtype = 'A' [static]
```

ttl

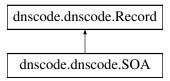
```
int dnscode.dnscode.Record.ttl = 3600 [static]
```

The documentation for this class was generated from the following file:

• src/dnscode/dnscode.py

7.9 dnscode.dnscode.SOA Class Reference

Inheritance diagram for dnscode.dnscode.SOA:



Public Member Functions

• __init__ (self, str name='@', str mname='ns1.example.com', str rname='admin.example.com', int serial=int(time. ← time()), int refresh=86400, int retry=7200, int expire=15552000, int ttl=21700)

Public Member Functions inherited from dnscode.dnscode.Record

__str__ (self)

Public Attributes

- mname = mname
- rname = rname
- serial = serial
- refresh = refresh
- retry = retry
- expire = expire

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

- str rclass = 'IN'
- str rtype = 'A'
- str name = '@'
- str data = '0.0.0.0'
- int ttl = 3600

7.9.1 Detailed Description

```
Represents an 'SOA' (Start of Authority) record.
```

7.9.2 Constructor & Destructor Documentation

init ()

```
dnscode.dnscode.SOA.__init__ (
    self,
    str    name = '@',
    str    mname = 'ns1.example.com',
    str    rname = 'admin.example.com',
    int    serial = int(time.time()),
    int    refresh = 86400,
    int    retry = 7200,
    int    expire = 15552000,
    int    ttl = 21700)
```

7.9.3 Member Data Documentation

expire

```
dnscode.dnscode.SOA.expire = expire
```

mname

```
dnscode.dnscode.SOA.mname = mname
```

refresh

```
dnscode.dnscode.SOA.refresh = refresh
```

retry

```
dnscode.dnscode.SOA.retry = retry
```

rname

```
dnscode.dnscode.SOA.rname = rname
```

serial

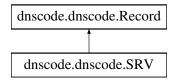
```
dnscode.dnscode.SOA.serial = serial
```

The documentation for this class was generated from the following file:

• src/dnscode/dnscode.py

7.10 dnscode.dnscode.SRV Class Reference

Inheritance diagram for dnscode.dnscode.SRV:



Public Member Functions

• __init__ (self, str name='@', int ttl=3600, str service="service", str protocol='proto', int priority=10, int weight=10, int port=0, str host='example.com')

Public Member Functions inherited from dnscode.dnscode.Record

```
• str (self)
```

Public Attributes

- service = service
- protocol = protocol
- priority = priority
- weight = weight
- port = port
- host = host

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

- str rclass = 'IN' str rtype = 'A'
- str name = '@'
- str data = '0.0.0.0'
- int ttl = 3600

7.10.1 Detailed Description

```
Represents an 'SRV' (Service) record.
```

7.10.2 Constructor & Destructor Documentation

__init__()

7.10.3 Member Data Documentation

host

```
dnscode.dnscode.SRV.host = host
```

port

dnscode.dnscode.SRV.port = port

priority

```
dnscode.dnscode.SRV.priority = priority
```

protocol

```
dnscode.dnscode.SRV.protocol = protocol
```

service

```
dnscode.dnscode.SRV.service = service
```

weight

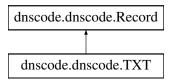
```
dnscode.dnscode.SRV.weight = weight
```

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.11 dnscode.dnscode.TXT Class Reference

Inheritance diagram for dnscode.dnscode.TXT:



Public Member Functions

```
    __init__ (self, str name='@', int ttl=3600, str text='example.com')
```

Public Member Functions inherited from dnscode.dnscode.Record

Additional Inherited Members

Static Public Attributes inherited from dnscode.dnscode.Record

- str rclass = 'IN'
- str rtype = 'A'
- str name = '@'
- str data = '0.0.0.0'
- int ttl = 3600

7.11.1 Detailed Description

```
Represents a 'CNAME' (Canonical Name) record.
```

7.11.2 Constructor & Destructor Documentation

The documentation for this class was generated from the following file:

src/dnscode/dnscode.py

7.12 dnscode.dnscode.Zone Class Reference

Public Member Functions

- __post_init__ (self)
- __str__ (self)
- new_A (self, str name='@', int ttl=3600, str host='0.0.0.0')
- new_AAAA (self, str name='@', int ttl=3600, str host='fe80::42:2cff:fe29:8db1')
- new CNAME (self, str name='@', int ttl=3600, str host='example.com')
- new MX (self, str name='@', int ttl=3600, int priority=10, str host='example.com')
- new NS (self, str name='@', int ttl=3600, str host='example.com')
- new PTR (self, str name='@', int ttl=3600, str host='example.com')
- new_SOA (self, str mname='ns1.example.com', str rname='admin.example.com', int serial=int(time.time()), int refresh=86400, int retry=7200, int expire=15552000, int ttl=21700)
- new_SRV (self, str name='@', int ttl=3600, str service='service', str protocol='proto', int priority=10, int weight=10, int port=443, str host='example.com')
- new_TXT (self, str name='@', int ttl=3600, str text='example.com')
- new_record (self, str name='@', int ttl=3600, str rtype='A', str data='0.0.0.0')
- add (self, Record record)
- save_stdout (self)
- save_file (self, str filepath)

Static Public Attributes

- str origin = 'example.com'
- list records = field(default_factory=list)

7.12.1 Detailed Description

Represents a DNS zone containing multiple records.

7.12.2 Member Function Documentation

```
__post_init__()
```

Initializes a zone with the given origin and ensures it ends with a dot.

```
__str__()
dnscode.dnscode.Zone.__str__ (
           self)
Returns a string representation of the zone.
add()
dnscode.dnscode.Zone.add (
           self,
          Record record)
Adds a record to the zone.
new_A()
dnscode.dnscode.Zone.new_A (
           self,
          int tt1 = 3600,
           Creates and adds a new A record to the zone.
new_AAAA()
dnscode.dnscode.Zone.new_AAAA (
           self,
          int tt1 = 3600,
           Creates and adds a new AAAA record to the zone.
new_CNAME()
dnscode.dnscode.Zone.new_CNAME (
           self,
           int tt1 = 3600,
           str host = 'example.com')
Creates and adds a new CNAME record to the zone.
new_MX()
dnscode.dnscode.Zone.new_MX (
           self,
           str name = '@',
           int tt1 = 3600,
           int priority = 10,
           str host = 'example.com')
Creates and adds a new MX record to the zone.
```

new_NS()

```
dnscode.dnscode.Zone.new_NS (
            self,
            int tt1 = 3600,
            str host = 'example.com')
Creates and adds a new NS record to the zone.
new_PTR()
dnscode.dnscode.Zone.new_PTR (
             self,
            int tt1 = 3600,
            str host = 'example.com')
Creates and adds a new PTR record to the zone.
new_record()
dnscode.dnscode.Zone.new_record (
             self,
            int tt1 = 3600,
            str rtype = 'A',
            str data = '0.0.0.0')
Creates and adds a generic DNS record to the zone.
new_SOA()
dnscode.dnscode.Zone.new_SOA (
            self,
            str mname = 'ns1.example.com',
            str rname = 'admin.example.com',
            int serial = int(time.time()),
            int refresh = 86400,
            int retry = 7200,
            int expire = 15552000,
            int tt1 = 21700)
Creates and adds a new SOA record to the zone.
new_SRV()
dnscode.dnscode.Zone.new_SRV (
            self,
            str name = '@',
            int tt1 = 3600,
            str service = 'service',
            str protocol = 'proto',
```

int priority = 10,

8 File Documentation 19

```
int weight = 10,
             int port = 443,
             str host = 'example.com')
Creates and adds a new SRV record to the zone.
new_TXT()
dnscode.dnscode.Zone.new_TXT (
              self,
             str name = '@',
             int tt1 = 3600,
             str text = 'example.com')
Creates and adds a new CNAME record to the zone.
save file()
dnscode.dnscode.Zone.save_file (
              self,
             str filepath)
Saves the zone records to a file.
save_stdout()
dnscode.dnscode.Zone.save_stdout (
              self)
7.12.3 Member Data Documentation
origin
str dnscode.dnscode.Zone.origin = 'example.com' [static]
records
list dnscode.dnscode.Zone.records = field(default_factory=list) [static]
The documentation for this class was generated from the following file:
   • src/dnscode/dnscode.py
```

8 File Documentation

8.1 README.md File Reference

8.2 src/dnscode/__init__.py File Reference

Namespaces

• namespace dnscode

8.3 src/dnscode/dnscode.py File Reference

Classes

- class dnscode.dnscode.InvalidDataException
- · class dnscode.dnscode.Record
- class dnscode.dnscode.A
- class dnscode.dnscode.AAAA
- class dnscode.dnscode.CNAME
- class dnscode.dnscode.MX
- · class dnscode.dnscode.NS
- · class dnscode.dnscode.PTR
- · class dnscode.dnscode.SOA
- · class dnscode.dnscode.SRV
- · class dnscode.dnscode.TXT
- · class dnscode.dnscode.Zone

Namespaces

- namespace dnscode
- namespace dnscode.dnscode

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