

```
1  import base64
2  import json
3
4  from Crypto.Cipher import AES
5
6  JSON_KEY = ['nonce', 'ciphertext', 'tag']
7
8
9  def encrypt(data, key):
10     cipher = AES.new(key, AES.MODE_GCM)
11
12     ciphertext, tag = cipher.encrypt_and_digest(data)
13
14     json_v = [base64.b64encode(x).decode() for x in [cipher.nonce, ciphertext, tag]]
15
16     return json.dumps(dict(zip(JSON_KEY, json_v))).encode()
17
18
19  def decrypt(json_data, key):
20     b64 = json.loads(json_data.decode())
21
22     jv = {k: base64.b64decode(b64[k]) for k in JSON_KEY}
23
24     cipher = AES.new(key, AES.MODE_GCM, nonce=jv['nonce'])
25
26     # any decrypt error will be caught in main, and trigger restart
27
28     return cipher.decrypt_and_verify(jv['ciphertext'], jv['tag'])
29
```