

API Covid. Manual de uso.

1. Paso primero.

El primer paso consiste en obtener una clave publica con la que generar una transmisión de datos segura entre el usuario y la aplicación. Para ello se realiza una petición get (petición 1 proyecto postman):

The screenshot shows the Postman interface with a workspace named "My Workspace". On the left, a collection named "CovidAPI" with 8 requests is listed. The first request, "1. GetPublicKeyToCommunicate", is selected. The main panel shows the details of this GET request to the URL "http://193.176.87.187:4444/api/user". The "Params" tab is active, showing a table for Query Params with columns KEY, VALUE, and DESCRIPTION. The "Body" tab is also active, showing the response body in "Pretty" format. The response status is 200 OK, with a response time of 250 ms and a body size of 725 B. The response body is a JSON object containing RSA key information.

KEY	VALUE	DESCRIPTION
Key	Value	Description

```
<RSAKeyValue><Modulus>vxPE1sNNU5k6Jd8wXS1m1D2B0ckPfL0BvecDLfGYLVrEXFGIzso0aMw5Gq2rhWn9TF6o5CdCj_lKb65iT4g1W2VvKneMDuTMfRTLg8figAIkUMi00HsdeeFK4AdhA1fxwKux9FAGGek8qW+HR/9Wv+LzuFonWdSp+CV40oB5pJ4FR9BQ327e48d05YbGy2Uq+BAJe+bYxKs0nj0MwCPV1tC8A+CYxdCyuS8ecvay3tEK3rcVpiPmdmzw50gstGp3A70IXyyfNd/DPYw8eajXhxWZ223Yo8sh7s0a3WX570TBjXQa0J0eT6RKImSGjJnYusrIhhFNG26as9Y0m2h0SX+r9J3lK/a9dep+syZZPdd4t0l0J99mcr06TVUB4Tp8Ck6cw5Z29mj2JKDr6DnjNU5eddx2vKhCOglytFdVn1zukImDA6MTWSow2mWrUeSC2jmplY8DXMj+1y5F0YWAxKVLFA+wDo3PLAx+zhk1y4BvPALCwjeJqlliZRzEBDP</Modulus><Exponent>AQAB</Exponent></RSAKeyValue>
```

2. Paso segundo.

La clave pública devuelta por la aplicación la usaremos para encriptar el usuario que daremos de alta. La aplicación esta pensada para que este proceso lo realice el usuario mediante un programa y que los datos sensibles sean solo transmitidos de manera encriptada, pero se ha habilitado este servicio para que la aplicación pueda ser probada desde un programa con interfaz gráfica.

The screenshot displays a REST client interface with a sidebar on the left containing a 'Collections' tab and a list of requests under 'CovidAPI'. The main area shows a selected POST request '2. Encrypt user mail' to the endpoint 'http://193.176.87.187:44444/api/EncryptionService'. The 'Body' tab is active, showing a JSON payload in a code editor. The payload contains an RSA key value and a text field with the email 'newuser@myuser.com'. The response area on the right shows a long, base64-encoded string. The bottom status bar indicates a 200 OK response with a 324 ms duration and 654 B of data.

```
1 {
2   "key":
3     "<RSAKeyValue><Modulus>vxPEIsNNU5k6Jd8wXS1mID280ckPfLQ8vecDLfGYLvrEXFgIzsoQaMw5Gq2
4     rHwN9TF6o5CdCjKb65i4g1W2VvKneMDuTMFRTLg8figAIkUM100HsdeeFK4AdhA1fxWkUx9FAgGek8q
5     W+HR/9Ww+lzuF0nWdSp+CV40oBSpJ4fR9BQ327e48dD5YbG2Uq+BAJe+bYxKs0nj0MwCPV1tC8A
6     +CYxdCyS8ecvay3tEK3rcVpiPmdmw5QgstGp3A7QIXyyfNd/
7     DPYw8eajXhxWZ223Yo8sh7s0a3Wx57QTBjXQaDJoeT6RKIm5GjJnYusrIhhFNG26as9Y0m2h0SX
8     +r9J3lK/a9dep
9     +syZZPdd4t0l0J99mcr06TVUB4Tp8Ck6cw5Z29mj2JKDr6DnjNU5eddw2vKhCOglytfdvN1zukImDA6MT
10    W50w2mWUeSC2jmplY8DXMj+1y5F0YWAxKVLFA+w0o3PLAx+zhkly4BvPALCwjeJqIliZRzEBDP</
11    Modulus><Exponent>AQAB</Exponent></RSAKeyValue>",
12   "text": "newuser@myuser.com"
```

```
1 U30utTiF+mYnI7qn7wtLwi00AXP3/uwLpUZkLSA9h/
jTDS5lCf2STIbD4az5Nga001Phudvshb2ypwKrK6PckJtai4N
+8GjS3Y5mMyL4JA49ad5CnecVaLyV6IDkUUFuU0yCEh6F9rlrXQMP0nCYb6Xr7id
+2oLugwINPwrpGM5x5zkF9sdtXL7YYNzRT9HEEUgQFcCSWux8QeOpOueMttr2aLMIId5d/V/wzZiePY
+uIwaU1VuiWtbJ3TqC6afN/3+ndqEJp6PkLmAjpmz1m00kCZVxm11y
+KdZRR0IcmlP6cYT4jJHVsKlgZy2aeiaukhW0dSXD0mIE2wAmMLJ93T0Bo61b6PeaCFG04Gt4BQI2HvK1gN2Di
YSK1zbXy0SfximzGRHR/LQaExA2n1HKEZZ50bRLMfdsVHVY4XoDgcCT5C9phm1LwBuPdIQMaLkCgocqSU/
Dncb5Cq7E/Eptal4gX9VBEZL6cEgEc/QAFihknvdCGrQvy6L7YxN
```

3. Paso tercero.

Es idéntico al anterior solo que esta vez encriptaremos la contraseña para el nuevo usuario.

The screenshot displays the Postman REST client interface. On the left, a sidebar shows a collection named 'CovidAPI' with 8 requests. The third request, '3. Encrypt user pass', is selected. The main panel shows the details of this POST request to the endpoint 'http://193.176.87.187:4444/api/EncryptionService'. The request body is in JSON format, containing a 'key' field with a long RSA key string and a 'text' field with the value 'newpass'. The right panel shows the response body in 'Pretty' format, which is a long Base64-encoded string. The status bar at the bottom indicates a successful response with a 200 OK status, 175 ms response time, and 654 B body size.

File Edit View Help

+ New Import Runner

My Workspace Invite

Filter

History Collections APIs

+ New Collection

Trash

CovidAPI
8 requests

GET 1. GetPublicKeyToCommunica...
POST 2. Encrypt user mail
POST 3. Encrypt user pass
POST 4. Sign up new user
POST 5. Encrypt user with its own public key
POST 6. Encrypt user pass with its own public key
POST 7. Authorize user
POST 8. Send covid requests

GET 1. GetPublicKeyToCommunica...
POST 2. Encrypt user mail
POST 3. Encrypt user pass

3. Encrypt user pass

POST http://193.176.87.187:4444/api/EncryptionService

Send Save

Params Auth Headers (8) Body Pre-req. Tests Settings

raw JSON Beautify

```
1 {  
2   "key":  
3     "<RSAKeyValue><Modulus>vxPE1sNNU5k6Jd8wXS1mID2B0ckPfLQBvecDLfGYLVrEXFgIzso0aMw5Gq2  
4     rhWn9TF6o5CdCjlkK65iT4g1W2VvKneMDuTMfRTL68figAIkUMi00HsdeeFK4AdhA1fXwKux9FAGgGek8q  
5     W+HR/9Wv+LzuF0nWdsp+CV40oBSpJ4fR9BQ327e48dD5YbGy2Uq+BAje+bYxKs0nj0MwCPV1tC8A  
6     +CYxdCyu58ecvay3tEK3rcVpiPmdmzw50gstGp3A7QIXyffNd/  
7     DPyw8eajXhxWZ223Yo8sh7s0a3WX57QTbjXQaDJoeT6RK1mSGjJnYusrIhhFNG26as9Y0m2h0SX  
8     +r9J3lK/a9dep  
9     +syZZPdd4t0l0J99mcr06TVUB4Tp8CK6cw5Z29mj2JKDr6DnjMU5eddw2vKhCOglytfdvN1zukImDA6MT  
10    W5ow2mWrrUeSC2jmplY8DXMj+1y5F0YWAxKVLFA+wDo3PLAx+zhk1y4BvPALCwjeJqIliZRzEBDP</  
11    Modulus><Exponent>AQAB</Exponent></RSAKeyValue>",  
12  
13    "text": "newpass"  
14  }
```

Body

200 OK 175 ms 654 B Save Response

Pretty Raw Preview Visualize Text

```
1 nqQ6nlr0g26jX40BDKuB1vZHj90LF9vyzqRkPCfXo5qH/  
2 ksNhC6Yb220VLuFeRXBuN06aCGpooHzKUDsa6D8Nn0RGPC2hzU4UMmG8R0QAYMYj08z3o  
3 +iwYSNDsRl2FrLTm6MTSyGjMmudclGls/TnThvyT4j1ygbGLvHTmPnEAMew6s6A  
4 +byGES02E0easzJ725fNTPi956LL9W83q/Gb9P8JEa7IqXYH/  
5 V0kyCaXc1LP03cGz2PC0J0SBNMck0Eb8TeqgMY6g5a4na41A1BvLFNVCRWsLjHqJ5s2sX24NQq2AHaYZhFPwPmb  
6 F73P5PLtdxteXYLm2LkLa6QjRGN9t37mphJBxTF80oP02KbftBaIpmwVBLbqab8UzRcsjt/  
7 0M2CaX3tZ16Sp6gtaOpB+yZAEtZzYGBSWMHrF71h1xe0tcjDS/wM2suc3egoE/sFp2em/  
8 Sjsr6sNIsuH8bV93XF8+aLSIp6E0lw10sCYUyuyYF18CDuRRZUyDk5R
```

Find and Replace Console

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4. Paso cuarto.

En este paso solicitaremos el alta de un nuevo usuario. Para ello copiaremos las respuestas de los dos pasos anteriores (usuario encriptado y contraseña encriptada) a una nueva petición. Esta petición puede encontrarse con el número 4 en el proyecto de Postman CovidAPI.

The screenshot displays the Postman application interface. On the left sidebar, the 'Collections' tab is active, showing a collection named 'CovidAPI' with 8 requests. The fourth request, '4. Sign up new user', is selected and highlighted. The main workspace shows the details of this request:

- Method:** POST
- URL:** http://193.176.87.187:44444/api/user
- Body:** The 'Body' tab is selected, showing a JSON payload. The 'email' field contains a long alphanumeric string, and the 'pass' field contains another long alphanumeric string. The 'new' field is set to true.

```
1 {
2   "email": "U30uttTiF+mYnI7qn7wtLwi00AXP3/uwLpUZkLSA9h/
jTD55lCf2ST1bD4azSnga001Phudvshb2ypwKrK6PckJtai4N
+8GjS3Y5mMy14JA49ad5CnecValyV6IDkUUFuUQyCEh6F9rlrXQMPQnCYb6Xr7id
+2oUgW1NPwPrGm5x5zkF9sdtXL7YYNzRT9HEEUgOfCcSWux8QuE0p0ueMtr2a1MIId5d/V/wzZiePY
+uIwaU1VU1wtbJ3Tq0C6afN/3+ndqEJp6PkLmAjpmz1m00kCZVxm1ly
+KDZRR0IcmLP6cYT4jJHVSKlgZy2aeiaukhw0dSX0mIE2wAMmLJ93I0Bo61bPeaCFG04Gt48QI2HvK1gN2Di
YSK1zbxY0SfximzGRHR/LQaExA2n1HKEZZ50bRLMfdsVHVY4XoDgcCT5C9phm1LwBuPd1QMA1kCGocqsU/
Dncb5Cq7E/EPTal4gX9VBEZl6cEgEc/QAFihknvdCGr0vy6L7YxN",
3   "pass": "nq06nlr0g26jX40BDKu81vZHj90LF9vyzqRkPCfXo5qH/
ksNhC6Yb220VLuFeRXBuN06aCGpoohzKUDsa6D8Nn0RGpC2hzU4UMmG8R0QAYMYXj08z3o
+iwYSNDsRl2FrlTm6MTSyGjMmudcLGls/TnThvyT4jlygbGLvHTmPnEAMew6s6A
+byGES02E0easzJT2SFNTP1956LL9W83g/Gb9P8JEa7IqXYH/
V0kyCaXcILP03cGz2PC0J0SBNMck0Eb8TeqgMY6g5a4na41A1BvLFNVCRWsljHqJ3s2sX24N0q2AhaYzHfPwPMB
F73P5PLtdxteXYLm2LkLa6QjRGN9t37mphJBxTF80oP02KbftvBaIpmwVBLbqab8UzRcsjt/
0M2CaX3t216spgtaDpB+yZEaELZzYGBSWMHrF71h1xe0tcjDS/wW2suc3egoE/sFp2em/
Sjsr6sNIuH8bv93XF8+aLSIpm6EQ1wl0sCYUyuyYF18CDuRRZUyDk5R",
4   "new": true
5 }
```

On the right side, the 'Response' tab is visible, showing a 200 OK status with a response body containing RSA key information.

5. Paso quinto.

Ahora repetiremos el paso 2. Pero en esta ocasión emplearemos la clave pública devuelta como respuesta en el paso 4. Ésta será la clave única de usuario y debe de almacenarse para evitar su pérdida.

The screenshot displays the Postman application interface. On the left, a sidebar shows a collection named 'CovidAPI' with 8 requests. The main workspace is titled 'My Workspace' and shows a sequence of requests. The selected request is '5. Encrypt user with its own public key', a POST method to the URL 'http://193.176.87.187:4444/api/EncryptionService'. The 'Body' tab is active, showing a JSON payload in raw format. The payload contains an RSA key and a text field for a new user email. The response area on the right shows a long, base64-encoded string, indicating a successful encryption process.

File Edit View Help

+ New Import Runner

My Workspace Invite

Filter

History Collections APIs

+ New Collection Trash

CovidAPI 8 requests

1. GetPublicKeyToCommunicate

2. Encrypt user mail

3. Encrypt user pass

4. Sign up new user

5. Encrypt user with its own public key

6. Encrypt user pass with its own public key

7. Authorize user

8. Send covid requests

POST 2. Encrypt user mail POST 3. Encrypt user pass POST 4. Sign up new user POST 5. Encrypt user with its own p...

No Environment

Examples 0 BUILD

POST http://193.176.87.187:4444/api/EncryptionService Send Save

Params Auth Headers (8) Body Pre-req. Tests Settings Cookies Code

raw JSON Beautify

```
1 {
2   "key": "<RSAKeyValue><Modulus>xd1IcgTrav8jV+N5U+i0Kujd020vQqjGmqdU/Roo/FgpPb75oKJ
+wh9iyCsSTdj1AOfGsv+Y7dmL2F4C0HeZTT4F1VAGnsNw2DzgictGI1mGzTaCQjr5wL5C
+M3aMbsCP7eZitetThuSCetLiypHQzt0y2lf8sTHirT0+W6UZy7Kw8Qq4Y4
+FFeMhzAAyU0mp7H9ZtdHKaxf3P0GsU7h6ftjUilaN8D15wDIcyJkx3eCdvC5meGrtr/P
+PA1LVhXYfFL3xUHPZ+XuICPgGdqCE0Uryt3AqiyRBrLwvunnF1DZCCmjy
+eo0yUDL4CjxbYuqpySBSNd4i0yHfzc/hWdf/
zDqhAf5t5ur1se6ExzEUfvprpJzY5CVp6oTmoqoKJFUETZiTvS4PJ5dddrINPcpIEDGh20Dvo8M1pFm5
Bc5vLkTTJggaykaajY/
uPumsBpYKGUjNL1Q80Lo8G5jrYmPdbJb0XA32LqUjxbx3ZS244539RjxwDhF7Jb0s7v</
Modulus><Exponent>AQAB</Exponent></RSAKeyValue>",
3
4   "text": "newuser@myuser.com"
5 }
```

200 OK 183 ms 654 B Save Response

Pretty Raw Preview Visualize Text

```
1 xMAQ5+a8l7LyZjsE8n8JPNcgvJeRMYNQEZ7TnAKxa03q/
F0WONOSkT1AKDdxDrLsRy6MQq6qdLqYY3fUuzvsW3v6LBp/17f5GfGDDFdK8CiYRDx1Fx
+RcqYMYNsK5FwZDrL7Yp1SaaHxvoEa20GHmYxHXpJ9f8Tmb380XXGZ+dBZ/
dTTNE09qz6lm9NDsl3RE5B7PXBrCjykc2y5xnqcmQK6tu2EWZ7L1gu1pLr99qy0cQ5LyclSCVwnSntzp4esq
5tZkYe8ppY0ajSNvLE2ZcieUCooy8s/MwCrjs7JelCs8GDReVAGymBzvgI0bsBLrrvc1B+36tkFVo38xH8oGqX
+GqCAlejaMYTjqMr29rFfd83HcEkgGbe05crYYgCcuXzeo02gvc3nJ1ah4S2dfStp4dAuusW0CAhf1A23I3M/
seHQczfaIkk7k4PLxXkdTIFj8LX2Veio+kLMiA1Ztr/6aQxM3uS00fyI/XA0jj/whc9trvTWdLYTbzGIF
```

Find and Replace Console

Bootcamp Build Browse

6. Paso sexto.

Aquí repetimos el paso 3. Esta vez con la clave pública de usuario al igual que en el paso anterior.

The screenshot displays the Postman API client interface. On the left, a sidebar shows a collection named 'CovidAPI' with 8 requests. The main workspace shows a REST client request for step 6: '6. Encrypt user pass with its own public key'. The request is a POST to the URL 'http://193.176.87.187:44444/api/EncryptionService'. The body is in JSON format and contains a long RSA key and a new password. The response is shown in the 'Body' tab on the right, displaying a long Base64-encoded string. The interface includes a top bar with navigation buttons, a sidebar with a search filter, and a bottom bar with a find and replace function and a console.

POST 2. Encrypt user mail POST 3. Encrypt user pass POST 4. Sign up new user POST 5. Encrypt user with its own p... POST 6. Encrypt user pass with its o...

6. Encrypt user pass with its own public key

POST http://193.176.87.187:44444/api/EncryptionService

Params Auth Headers (8) Body Pre-req. Tests Settings Cookies Code

raw JSON Beautify

```
1 {
2   "key": "<RSAKeyValue><Modulus>xd1IcgTrav8jV+N5U+i0KuJd020vQjGmqdU/Roo/FgpPb75oKJ
+wh9iyCsSTdj1A0fGsv+Y7dm12F4C0HeZTT4F1VAGnsNw2DgictGIImGzTaCQr5wL5C
+M3aMbsCP7eZietTHuSCetLIypHQzt0y2lf8sThirTO+W6UZY7Kw8Qq4Y4
+FFEMhzAAyuOmp7H9ZTdHkaxf3P0GsU7h6ftjUilaN8D15w0IcyJkx3eCdvC5meGrtr/P
+PA1LVhYffFL3xUHPZ+XuICPg6dqCE0Uryt3AqiyRBrLwvunnF1DZZCmny
+eo0yUDL4CjxbYuqpYSBsNd4i0yHfzc/hWdf/
zDqhAf5t5ur1se6ExzEufvrpiJzY5CVp6oTmoqoKJFUEtZiTvS4PJ5dddrINPcpiEDGh20Dvo8M1pFm5
Bc5v1kTTJggaykaaY/
uPumsBpYKGUjNl1QB0LoBGSjYrYmPdbJb0XA32LQjxbx3ZS244539RjxwDhF7Jb0s7v</
Modulus><Exponent>AQAB</Exponent></RSAKeyValue>",
3
4   "text": "newpass"
5 }
```

Body

1 r5/AdqGVF3aVwV7yF84ZtoQQUAeD9fczEoPSkJCgF5K4Y3+NKKDRSs0ay6zeoAjAm1lQblZn+UZPix
+XRUErMmCunvowhZ1tDL7/Gyy
+iVuWnyw7LKEzYDCLerkwPji3dp2wC5xHJpRi9FQ51U7xE8llkHanll1IyA9dgHntR5GP1tcef8p/
GrnfCk3xbUvx8N6v3zgNj8YK5oLvY8tC589VXjSnuuqDGBvcsbm53BRMr/50d/
yzsrPaIBctFwjbtLV0mNe04hK3ddPxtFU0rbvCsXyVaWsfrrIsr8BWzLA3RCYVIN8G0GwmSozp3ijVphkLH6H0
HfJBuFNK/UcUy4x8w6oNeeh4bXnL4mpvEUsmht6478qQrEJ0hhpC/MV6MjKflbcqCF3GLVc
+cFJyhzuQc5hg1CfGEf1axWrhdaeWbF7cAIg0yddUmv0JQXJehrf2E9N
+uGDaFK41karB0yeaZv8DMYx2YcBmzGWTt3KB9I42E1KHDP/K5aGj

Find and Replace Console

Bootcamp Build Browse

7. Paso séptimo.

Ahora resta autorizar al usuario para obtener un token de acceso perecedero. Igual que en el paso cuarto pegaremos el usuario encriptado en el paso quinto, la contraseña encriptada en el paso sexto y la clave pública de usuario obtenida como respuesta al paso cuarto. Esta vez el atributo “new” está establecido a “false”. La petición está numerada como 7 en el proyecto de Postman CovidAPI:

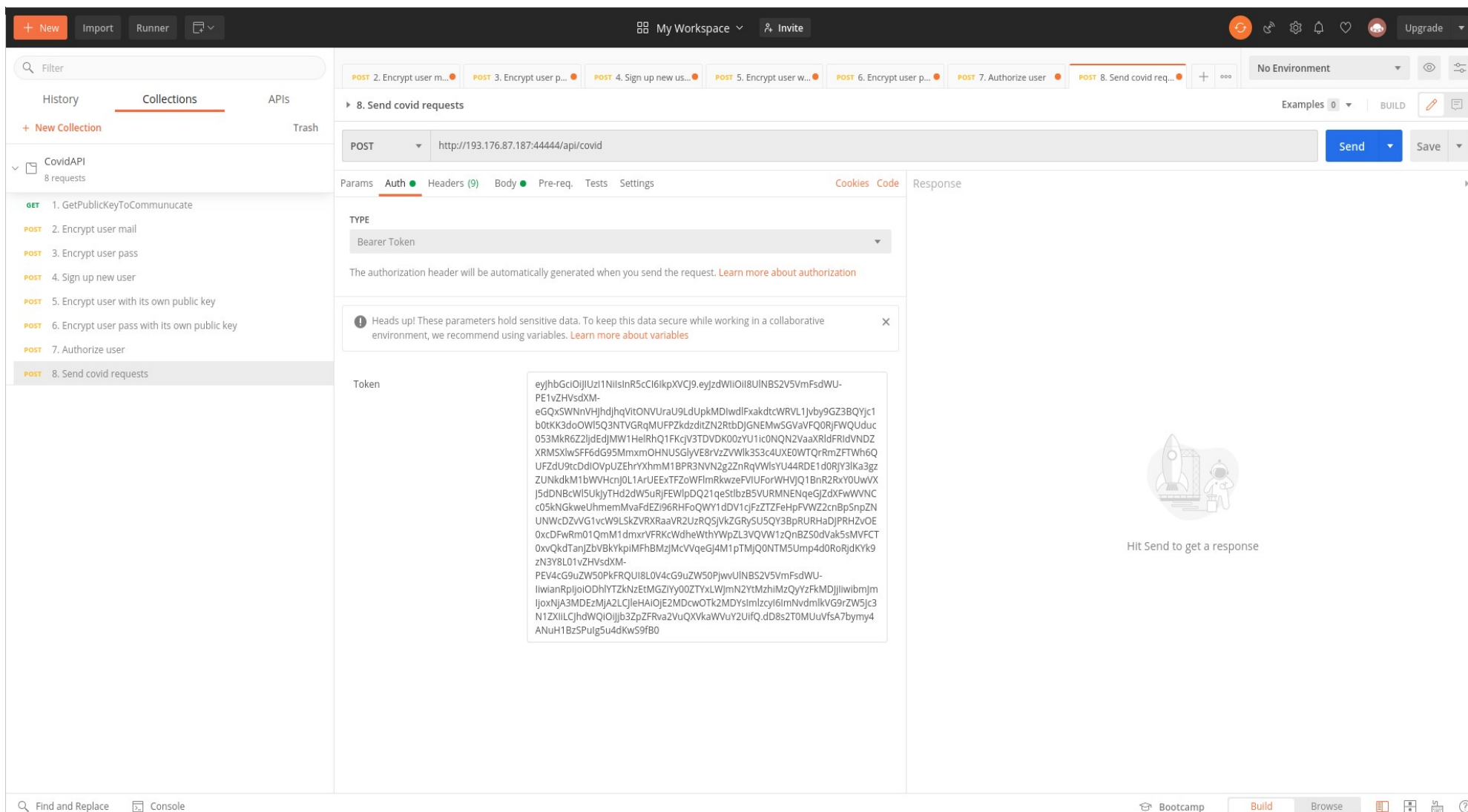
The screenshot displays the Postman interface for a REST client. On the left, a sidebar shows a collection named 'CovidAPI' with 8 requests. The main area shows the details of the 7th request, '7. Authorize user', which is a POST request to the URL 'http://193.176.87.187:4444/api/authorize'. The 'Body' tab is selected, showing a JSON payload. The payload contains an 'email' field with a long alphanumeric string, a 'pass' field with another long alphanumeric string, and a 'new' field set to 'false'. The 'public_key' field is also present, containing a long RSA key string. The response tab shows a 200 OK status with a response time of 953 ms and a body of 1.16 KB. The response body is a long alphanumeric string.

```
POST http://193.176.87.187:4444/api/authorize

{
  "email": "xMAQ5+a8l7LyZjsE8n8JPncgvJERMYNQEz7TnAKxa03q/F0WONOSkTiAkDdxDrLsRy6MQo6qdlqYy3fUuzvsW3v6LBp/17f5GfGDDfDk8CiYRDX1Fx+RcqYMYNsk5FwzDrL7YpiSAaHXvoEa20GhmYxHXpJ9f8Tmb380XXGZ+d8Z/dTTNE09qz6lm9NDsL3RE587PXBrCjykc2y5xnqcmQk6Tu2EWZ7Llgu1plr99qyQcQLyLcVwSntzp4esq5tZkYe8ppY0ajSNvLE2ZcieUCooy8s/MwCrjs7JelCs8GDRReVAGymBzvgI0bsBLrrvcIB+3GtKFVo38xH8oGqX+GqCAlEjaMYTjMr29rFfd83HcEkGbe05crYYGcCuXeo02gvC3nJ1ah4S2dfstp4AuuS0CAhf1A23I3M/seHQCzfaIkx7k4PlxXkdTIFj8LX2Vei0+kLMIa1Ztr/6aQxM3uSD0FyI/XA0jj/whc9trTWdLYTbzhGIF",
  "pass": "r5/AdqGVF3aVmw7yF84ZtoQQUAeD9fczEoP5kCgF5K4Y3+NKKDRSs0ay6zeoAjAm1lQblZn+UzPiX+XRUErMmCunvowhZ1tDl7/Gyy+iVuWnyw7LKEzYDCLerkwPji3dp2wC5xHjPr9FQ5I07xe8lLkHanllIyA9dgHntr5GP1tcf8p/GrnfCk3xbUvxBN6v3zgNj8YK5olvY8tC589VXjSnuuqDGBvcsbms3BMRr/50d/yzsrPaIBctFWjbtLTV0mNe04hK3ddPXTfUOrbvCsXyVaWsfrrIsr8BWzLA3RCYVIN8G0GwMsozp3ijVphkLH6H0HfJBUFNK/UcUy4x8w6oNeeh4bXnL4mpvEUsmhtG478q0rEJ0hhpC/MV6MjKflbcqCF3GLVc+cFJyhuQc5hG1CfGEflaxWrhdaeWbF7cAig0yYdUmv0JQQXJehrf2E9N+uGdaFK41karB0yea2v8DMYx2YcBmzGWTt3K89I42E1KHDP/K5aGj",
  "new": false,
  "public_key": "<RSAKeyValue><Modulus>xd1IcgTrav8jV+N5U+i0KuJd020vQqGmqdU/Roo/FgpPb75oKJ+wh9iyCsStDj1A0fGsv+Y7dml2F4C0HeZTT4F1VAGnsNw2DzgictG1lmGzTaCQJr5wL5C+M3aMbsCP7eZitetThUSCetLIypHQzttoy2l7f8sThiRto+W6UZY7Kw8Qq4Y4+FMHhZAAyU0mp7H9ZTDHkaxf3POGsU7h6ftjUilaN8D15wD1cykx3eCdvC5meGrtr/P+PA1LVhXYfFL3xUHPZ+XuICPgGdqCE0Uryt3AqiyRBrlwvunnFIDZZCCnjy+e08yUDL4CjxbYuqPY5BsNd4i0yHfzc/hWdf/zDqhAf5t5ur1se6ExZEUfvrpiJzY5CVp6oTmoqoKJFUETzTiVs4PJ5dddrINPcpiEDGh20Dvo8M1pFm5Bc5vLkTTJqgaykaajY/uPumsBpYKujN1Q80LoBGSjYrYmPdbJb0XA32LqJxbx3Z5244539Rjxw0Hf7Jb0s7v</Modulus><Exponent>AQAB</Exponent></RSAKeyValue>"
}
```


8. Paso octavo. Parte primera.

Como respuesta al paso anterior habremos recibido un token. Lo copiaremos y pegaremos como Auth (cabecera de mensaje) de la petición del paso 8 del proyecto de Postman seleccionando Bearer Token como tipo de la misma:



9. Paso octavo. Parte segunda.

Ahora es posible (durante 24 horas antes de volver a autenticarse) emplear la petición número 8 del proyecto de Postman CovidAPI para solicitar información. Las distintas formas de la misma están disponibles desde

https://github.com/alvaroMaleno/CovidAPI/blob/master/Documentation/Covid_API/SimpleUserGuide/ManualSimpleUsuario_Covid_API.md

The screenshot shows the Postman interface with a workspace named "My Workspace". The left sidebar displays a collection named "CovidAPI" with 8 requests. The main area shows a POST request to "http://193.176.87.187:4444/api/covid". The request body is a JSON object:

```
1 {
2   "covid_data":
3     {
4       "countries":
5         [
6           "ES"
7         ],
8       "dates":
9         {
10           "startDate": "01/05/2020",
11           "endDate": "08/10/2020",
12           "separator": "/"
13         },
14       "data":
15         {
16           "data": "any"
17         }
18     }
19 }
20
21 }
```

The response is a large JSON object with the following structure:

```
1 [{"father":null,"sonList":null,"geoID":"ES","code":"ESP","name":"Spain",
2   "population":46937060,"dataList":[{"id":283,"cases":12423,"deaths":126,"cured":0,
3     "date":{"id":283,"date":"08/10/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}},
4     {"id":282,"cases":10491,"deaths":76,"cured":0,"date":{"id":282,"date":"07/10/2020",
5       "dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":281,"cases":11998,"deaths":261,
6       "cured":0,"date":{"id":281,"date":"06/10/2020","dateSeparator":"/","dateFormat":"dd/
7       MM/yyyy"}}, {"id":280,"cases":23480,"deaths":139,"cured":0,"date":{"id":280,"date":"05/
8       10/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":279,"cases":0,
9       "deaths":0,"cured":0,"date":{"id":279,"date":"04/10/2020","dateSeparator":"/",
10      "dateFormat":"dd/MM/yyyy"}}, {"id":278,"cases":0,"deaths":0,"cured":0,"date":{"id":278,
11      "date":"03/10/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":277,
12      "cases":11325,"deaths":113,"cured":0,"date":{"id":277,"date":"02/10/2020",
13      "dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":276,"cases":9419,"deaths":182,
14      "cured":0,"date":{"id":276,"date":"01/10/2020","dateSeparator":"/","dateFormat":"dd/
15      MM/yyyy"}}, {"id":275,"cases":11016,"deaths":177,"cured":0,"date":{"id":275,"date":"30/
16      09/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":274,"cases":9906,
17      "deaths":203,"cured":0,"date":{"id":274,"date":"29/09/2020","dateSeparator":"/",
18      "dateFormat":"dd/MM/yyyy"}}, {"id":273,"cases":31785,"deaths":179,"cured":0,"date":
19      {"id":273,"date":"28/09/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}},
20      {"id":272,"cases":0,"deaths":0,"cured":0,"date":{"id":272,"date":"27/09/2020",
21      "dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":271,"cases":0,"deaths":0,
22      "cured":0,"date":{"id":271,"date":"26/09/2020","dateSeparator":"/","dateFormat":"dd/
23      MM/yyyy"}}, {"id":270,"cases":12272,"deaths":114,"cured":0,"date":{"id":270,"date":"25/
24      09/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":269,"cases":10653,
25      "deaths":84,"cured":0,"date":{"id":269,"date":"24/09/2020","dateSeparator":"/",
26      "dateFormat":"dd/MM/yyyy"}}, {"id":268,"cases":11289,"deaths":130,"cured":0,"date":
27      {"id":268,"date":"23/09/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}},
28      {"id":267,"cases":10799,"deaths":241,"cured":0,"date":{"id":267,"date":"22/09/2020",
29      "dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":266,"cases":31428,"deaths":168,
30      "cured":0,"date":{"id":266,"date":"21/09/2020","dateSeparator":"/","dateFormat":"dd/
31      MM/yyyy"}}, {"id":265,"cases":0,"deaths":0,"cured":0,"date":{"id":265,"date":"20/09/
32      2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":264,"cases":0,"deaths":0,
33      "cured":0,"date":{"id":264,"date":"19/09/2020","dateSeparator":"/","dateFormat":"dd/
34      MM/yyyy"}}, {"id":263,"cases":14389,"deaths":90,"cured":0,"date":{"id":263,"date":"18/
35      09/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}}, {"id":262,"cases":11291,
36      "deaths":162,"cured":0,"date":{"id":262,"date":"17/09/2020","dateSeparator":"/",
37      "dateFormat":"dd/MM/yyyy"}}, {"id":261,"cases":11193,"deaths":239,"cured":0,"date":
38      {"id":261,"date":"16/09/2020","dateSeparator":"/","dateFormat":"dd/MM/yyyy"}},
```

Más información en <https://github.com/alvaroMaleno/CovidAPI> .