

ENDPOINTS

Main Endpoint

GET /trng/randomNum/getRandom

This endpoint returns an array of sequences of bits of a specified length and quantity. The API guarantees that the sequences are randomly drawn. The length and quantity of the sequences can be specified using the following query parameters:

- **numBits** (optional, integer, minimum 1, default 1): The number of random bits in each bit sequence.
- **quantity** (optional, integer, minimum 1, default 1): The number of random sequences to generate.

Responses

- **200 OK:** The response is an array of strings, where each string is a randomly generated bit sequence of the specified length. The bit sequences are encoded as hexadecimal strings, with leading zeros if necessary. Example response:

```
[ "08c1f27b", "12d45f38", "9a6b7c5d" ]
```

- **432 Service Unavailable:** This error code is returned if the system is not ready to generate random numbers, such as when the random number source is in standby mode or is not reachable.
- **555 Internal Server Error:** This error code is returned if the system is unable to initialize within 60 seconds.

Example Usage

To generate 10 random bit sequences of length 8 using curl, you can run the following command:

```
curl "https://172.16.78.59:8443/trng/randomNum/getRandom?numBits=8&quantity=10"
```

System Control

GET /trng/randomNum/init

This endpoint initializes the random number generator. If the system is already initialized, a message indicating this fact will be returned.

Responses:

- **200 OK:** The system was initialized successfully. Example response: `{'message': 'System initialised successfully'}`
- **409 Conflict:** The system is already initialized. Example response: `{'message': 'System already initialized'}`
- **555 Internal Server Error:** There was an error during system initialization.

Example Usage:

```
curl "https://172.16.78.59:8443/trng/randomNum/init"
```

GET /trng/randomNum/shutdown

This endpoint shuts down the random number generator. If the system is already in standby, a message indicating this fact will be returned.

Responses:

- **200 OK:** The system was shutdown successfully. Example response: `{'message': 'System successfully shutdown'}`
- **409 Conflict:** The system is already shut down. Example response: `{'message': 'System already shut down'}`
- **555 Internal Server Error:** There was an error during system shutdown.

Example Usage:

```
curl "https://172.16.78.59:8443/trng/randomNum/shutdown"
```

Additional Endpoints

GET /trng/randomNum/generateTestdata

This endpoint generates a set of test data. The length and type of the data can be specified using the following query parameters:

- numBits (optional, integer, minimum 1, default 5000): The length of the data to generate.
- filetype (optional, string, default 'bin'): The type of the file to generate.

Responses:

- **200 OK:** The data was generated successfully. Example response: `{ 'message': 'Generation successful' }`
- **432 Service Unavailable:** The system is not ready to generate test data.
- **555 Internal Server Error:** There was an error during data generation.

Example Usage:

```
curl "https://172.16.78.59:8443/trng/randomNum/generateTestdata?numBits=1000&filetype=txt"
```

GET /trng/randomNum/downloadFile

After calling the `/trng/randomNum/generateTestdata` endpoint, you can use this endpoint to download a file that contains a set of test data.

Responses:

- **200 OK:** The file download begins.
- **555 Internal Server Error:** The requested file could not be found or there was an error during the file download.

Example Usage:

```
curl "https://172.16.78.59:8443/trng/randomNum/downloadFile"
```

GET /trng/randomNum/restart

This endpoint restarts the random number generator. If the system is already in standby, a message indicating this fact will be returned.

Responses:

- **200 OK:** The system was restarted successfully. Example response: `{ 'message' : 'System successfully restarted' }`
- **555 Internal Server Error:** There was an error during system restart.

Example Usage:

```
curl "http://localhost:5000/trng/randomNum/restart"
```

Please note that for each of these endpoints, the 555 error code is returned for any exceptions not explicitly caught by the system, indicating an unexpected server error.