

VOTIRO

Votiro Cloud for Web Applications

User Guide



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1 Introduction

Votiro Cloud for Web Applications exposes a REST API for adding protection to any application. The Votiro solution positively selects known elements from documents stored, accessed, shared, and collaborated on across multiple devices and data sources. In addition to email, file servers, and desktop applications, Votiro Cloud offers various capabilities to help secure structured data, in many known formats, across the entire organization.

Maintaining full functionality of safe files, Votiro Cloud protects against all known and unknown malicious content threats.

Additional information regarding Votiro's technology, positive selection policies, and supported file types can be found in the Votiro Cloud User Guide and on the Votiro website: <https://www.votiro.com>.

This Votiro Cloud for Web Applications document describes the programming interface to Votiro's Positive Selection® Engine using a hosted Web Service in the cloud or on premises.

2 Positive Selection Policies

A named policy is customized policy that meet your organization's requirements for processing files for positive selection of safe elements. Use the Votiro Cloud Management Dashboard to create positive selection named policies by case and by file type.

If you do not create a customized policy, Votiro's Positive Selection® Engine uses the set default policy for the case or file type being processed.

For more information, see [Managing Positive Selection Policies](#) in the Votiro Cloud User Guide.

3 Uploading a File for Positive Selection

You can upload a potentially malicious file to Votiro Cloud, where it is queued for positive selection, and then processed. Positive selection policies that dictate how the file is scanned and processed can be set in Votiro Cloud.

Select from the following options when uploading a file for positive selection:

- **Upload** - this option requires calling three APIs in the order below:
 - a. [See Uploading a File for Positive Selection](#) - this is the upload request
 - b. [See Checking the Status of a Positive Selection Request](#) - this is the check status request called after receiving the requestId from the completed upload request
 - c. [See Downloading a Processed File](#) - this is the download processed file request called after receiving the status from the check status request
- **Sync-upload** - this option requires calling two APIs in the order below:
 - a. [See Sync-uploading a File for Positive Selection](#) - this is the sync-upload request. The sync-upload finishes after the file sanitization is done. The response for the sync-upload will be the requestId and status. For example:

requestId: "58be4846-9c82-4c58-8775-f3a8a935fd5c",

status: "Done"
 - b. [See Downloading a Processed File](#) - this is the download processed file request called after receiving the status from the completed sync-upload request

Notes

Files up to 2 GB can be uploaded for positive selection.

Uploading 0-byte files is not supported.

3.1 Uploading a File for Positive Selection

Upload the file for positive selection with the following command:

POST https://<votiro_appliance>/disarmer/api/disarmer/v4/upload

3.2 Sync-uploading a File for Positive Selection

The sync-upload step combines the upload step and the check step of the positive selection process for a file. Upload the file for positive selection with the following command:

POST https://<votiro_appliance>/disarmer/api/disarmer/v4/upload-sync

3.3 Request Data

Request URL Parameters

No additional parameters are added to the request URL.

Request Header Parameters

Request header parameters are case sensitive.

Table 1 Request Header Parameters

Parameter	Description	Type	Required/Optional
Authorization	This is the Bearer <token>	string	Required
Content-Type	Value must be "multipart/form-data"	string	Required

Notes

- For creating a token see the Votiro Cloud User Guide, Configuring System Settings.
- You can use additional recommended header keys depending on your environment, for example, **Host**, **Accept** with value "*/*".

Request Body

In the request body, supply the content of the file. The content should contain the file's binary data, that is, in the same way it is saved in the user's storage.

Table 2 Request Body Parameters

Parameter	Description	Type	Required/Optional
File	File form-data, including: file name, file length and binary data.	string	Required

Parameter	Description	Type	Required/Optional
Properties	<p>Values must be associated with keys from the JSON key-value collection. For example: {"key1":"value1"}.</p> <p>Optional Properties include:</p> <p>PolicyName</p> <p>File name of a predefined policy rules collection (also known as named policy).</p> <p>For PolicyName, specify the name of the policy, without any extension. For example, CXO.</p> <div style="background-color: #f0f0f0; padding: 5px;"> <p>Note</p> <ul style="list-style-type: none"> ■ If you do not enter a policy name, a default policy is applied. ■ If the PolicyName entered does not match a policy set up in Votiro Cloud, the default policy is used. A message will appear in the log. </div> <p>Password</p> <p>Allows positive selection of password-protected archive files with the following file types: PDF, ZIP, 7zip, RAR, DOC, DOCX, DOT, DOTX, DOCM, DOTM, XLS, XLT, XLSX, XLTX, XLSM, PPT, PPS, POT, PPTX, PPSX, POTX and PPTM. It does not work on other file types that can be protected by a password, such as Visio files.</p> <p>Password will be used only with PolicyName.</p> <p>ChannelType</p> <p>The name of the channel type of connector being used.</p> <p>For ChannelType, specify FileConnector.</p> <p>ChannelId and ChannelName</p> <p>The ChannelId and ChannelName are paired.</p> <p>ChannelId is provided by Votiro and is a unique identifier of the application.</p> <p>ChannelName should be a human readable name, so it can be filtered by the end user (Email, Portal, etc.)</p>	string	Required; can be empty

Parameter	Description	Type	Required/Optional
	<p>Extended request information:</p> <p>User, Groups, Client, Server, From, To, Path are all optional, but reserved words. These attributes are important for monitoring and analytics of our product.</p> <p>Other Key values:</p> <p>Domain, User Agent, URL Category, Application ID, or any other useful information will be populated into a dedicated UI widget.</p>		

Notes

- When using the Password parameter, you must set the Password Protected case policy to **Sanitize**.
- For more information, see Managing Positive Selection Policies in the Votiro Cloud User Guide.

Request for Sync-upload

To manage sync-upload requests in your environment, optional content changes to the file can be made to the following:

- Virtual appliance address
- Bearer token
- Filepath
- Policy Name
- Channel Name
- Channel ID

Note
Do not change **Channel Type**, it must remain as "FileConnector".

For more details and an example of file content changes, see [Sample Code - Sync-upload on page 27](#).

Request Examples

IMPORTANT!
The example commands use **upload**. You can also use **upload-sync**.

- Posting a password-protected file named *Q1Reports.zip*.

POST https://api.votiro.com/disarmer/api/disarmer/v4/upload HTTP/1.1

Host: api.votiro.com

Authorization: Bearer: <Token>

Content-Length: 712692

Content-Type: multipart/form-data; boundary=<Boundary>

<Boundary>

Content-Disposition: form-data; name="File";
filename="<filepath>/Q1Reports.zip"

Content-Type: <Content-Type header here>

(data)

Content-Disposition: form-data; name="Properties"

{"ChannelType":"FileConnector","ChannelId":"30acc6eb-16d9-4133-
ae43-0f5b6d40a318","ChannelName":"ChannelFin",
"Password":"psWd172","PolicyName":"Default Policy"}

<Boundary>

- Uploading a PDF file named *OrgChart.pdf*.

POST https://api.votiro.com/disarmer/api/disarmer/v4/upload HTTP/1.1

Host: api.votiro.com

Authorization: Bearer: <Token>

Content-Length: 712692

Content-Type: multipart/form-data; boundary=<Boundary>

<Boundary>

Content-Disposition: form-data; name="File";
filename="<filepath>/OrgChart.pdf"

Content-Type: <Content-Type header here>

(data)

Content-Disposition: form-data; name="Properties"

```
{
  "ChannelType": "FileConnector",
  "ChannelId": "30acc6eb-16d9-4133-ae43-0f5b6d40a319",
  "ChannelName": "ChannelHR",
  "PolicyName": "Default Policy"
}
```

<Boundary>

3.4 Response Data

Response Parameters

Table 3 Response Parameters

Parameter	Description	Type
requestId	Upload request ID.	string (GUID)

Response Examples

- Response to an uploaded PDF file using upload command:

4d6888d1-5ab5-4cf5-9d19-d43f16fd01d8

- Response to a file uploaded using upload-sync command:

```
{  
  "requestId": "4d6888d1-5ab5-4cf5-9d19-d43f16fd01d8",  
  "status": "Done"  
}
```

4 Downloading a Processed File

GET `https://<votiro_appliance>/disarmer/api/disarmer/v4/download/<requestId>`

Downloads a file with a **Done** or **Blocked** status.

The download request for a blocked file returns a PDF detailing the reason the file was blocked during the positive selection process.

The file name is returned in all response headers.

4.1 Request Data

Request URL Parameters

Request parameters are case sensitive.

Table 4 Request URL Parameters

Parameter	Description	Type	Required/Optional
requestId	Upload request ID	string	Required

Request Header Parameters

Request parameters are case sensitive.

Table 5 Request Header Parameters

Parameter	Description	Type	Required/Optional
Authorization	Bearer <token> is used for authentication	string	Required.

Request Example

GET `https://api.votiro.com/disarmer/api/disarmer/v4/download/c94f00a4-7a36-4152-977d-dda71cccfb95`

Authorization: "Bearer <token>"

4.2 Response Data

Response Body (Content Disposition)

Table 6 Response Body (Content Disposition)

Parameter	Description	Type
attachment		string

Parameter	Description	Type
filename	The ASCII encoded file name. If the file was processed successfully, this is the file name. If the file was blocked, then the suffix _blocked.pdf is added to the file name.	string
filename*	The UTF-8 URL encoded file name. If the file was processed successfully, this is the file name. If the file was blocked, then the suffix _blocked.pdf is added to the file name.	string

Response Example

```
HTTP/1.1 200 OK Content-Type: application/octet-stream Server:
Microsoft-HTTPAPI/2.0
```

```
Content-Disposition: attachment;
```

```
filename=test.pdf;
```

```
filename*=UTF-8''test.pdf Date: Fri. 13 Nov 2016 13:21:59
```

```
[Actual File Binary Content]
```

5 Downloading a Positive Selection Report

GET `https://<votiro_appliance>/disarmer/api/disarmer/v4/report/<ID>`

Generates a report that details which engines were executed on each item and sub-item during the positive selection process.

5.1 Request Data

Request URL Parameters

Request parameters are case sensitive.

Table 7 Request URL Parameters

Parameter	Description	Type	Required/Optional
ID	Upload request ID	string	Required

Request Header Parameters

Request parameters are case sensitive.

Table 8 Request Header Parameters

Parameter	Description	Type	Required/Optional
Authorization	Bearer <token> is used for authentication	string	Required.

Request Example

```
GET https://api.votiro.com/disarmer/api/disarmer/v4/report/c94f00a4-7a36-4152-977d-dda71cccfb95
```

```
Authorization: "Bearer <token>"
```

5.2 Response Data

The download response is a JSON object.

Response Body

Table 9 Response Body

Parameter	Description	Type
ID	Upload request ID.	string
relativePath	Relative path of the child from the root item.	string
originalFileName	Relative path of artifact file.	string
sanitizedFileName	Relative path of artifact file.	string

Parameter	Description	Type
originalSize	File size in bytes of the original file.	number
sanitizedSize	File size in bytes of the processed file.	number
originalPublishStatus	Publish status of the original file.	number
sanitizedPublishStatus	Publish status of the processed file.	number
FileType	File type information for the current artifact as determined by Votiro File Type Discoverer.	object
FileType.Code	File type code.	number
FileType.Type	Artifact file type description.	string
FileType.Family	Artifact file type family description.	string
queueTime	Always zero, positive selection process starts immediately.	string
processStartTime	Time Votiro started the file processing.	string
processEndTime	Time Votiro processing ended.	string
status	Positive selection status.	string
Events	Events for the current artifact.	array of Events objects
Events.date	The date and time of the event.	string
Events.id	Event code. See the following table.	number
Events.name	Event name.	string
Events.message	Event textual description message. Subject to changes.	string
Events.severity	Urgency of the event: The valid integer values are 0-6, where 6 is the most severe.	number
Events.category	Category name and value. Can be one of: <ul style="list-style-type: none"> ■ Trace - 10000000 ■ System - 20000000 ■ Indicator - 50000000 ■ Internal Trace - 60000000 See the following Report Events table.	number
Events.subCategory	The subCategory name and value are unique within the category it belongs to. See the following Report Events table.	number
children	Sub-objects that were processed separately from the processed file, for example, a ZIP archive file or nested Office document.	array
hash	File hash code.	string
extendedInfo	Email metadata, if delivered.	object

Response Example

```
{
  "id": "0bafef86-41e0-4ccc-a69f-00b812cb5602",
  "relativePath": "",
  "originalFileName": "bar.json",
  "sanitizedFileName": "bar.json",
  "originalSize": 450,
  "sanitizedSize": 0,
  "originalPublishStatus": 0,
  "sanitizedPublishStatus": 0,
  "fileType": {
    "code": 125,
    "type": "Unknown Text",
    "family": "Unknown Text Files"
  },
},
"queueTime": "00:00:00",
"processStartTime": "2020-07-13T09:33:51.8399432Z",
"processEndTime": "2020-07-13T09:33:56.855111Z",
"status": "OK",
"events": [
  {
    "date": "0001-01-01T00:00:00",
    "id": 10020100,
    "name": "File Uploaded",
    "message": "File bar.json upload for sanitization
started. Item Id: 0bafef86-41e0-4ccc-a69f-00b812cb5602",
    "severity": 2,
    "category": 10000000,
    "subCategory": 10020000
  }
],
"children": [],
"hash":
"d598b34dc6d5e1556a00ff9df852f390fef6bc9a390ca744f12cd88ee892
99f7",
"extendedInfo": {
  "email": {
    "headers": [],
    "from": {
      "address": null,
      "displayName": null
    },
  },
  "to": [],
  "envelopeRecipients": [],
  "cc": [],
  "bcc": [],
  "subject": null,
}
```

```
    "body": null,  
    "date": "2020-07-13T13:08:08.1473082+00:00",  
    "attachments": [],  
    "embeddedResources": []  
  }  
}  
}
```

6 Checking the Status of a Positive Selection Request

GET `https://<votiro_appliance>/disarmer/api/disarmer/v4/status/<requestId>`

Checks the processing status of a file using the `requestId` you received when uploading the file for positive selection processing.

The positive selection process relies on polling. If no polling takes place for over 60 seconds there is a chance the positive selection request may be deleted. You can configure setting values for the polling interval and the keep alive interval attributes. See the Votiro Cloud User Guide, Configuring the Management Platform.

Note

To cancel the processing of a file you can use the GET command. The Cancellation Timeout value is set by default according to the version you are using:

For SaaS: "CancellationTimeout": "01:02:30"

For on-premises VA: "CancellationTimeout": "00:02:30"

To change this value, contact our Support team for instructions.

6.1 Request Data

Request URL Parameters

Request parameters are case sensitive.

Table 10 Request URL Parameters

Parameter	Description	Type	Required/Optional
requestId	Upload request ID	string	Required

Request Header Parameters

Request parameters are case sensitive.

Table 11 Request Header Parameters

Parameter	Description	Type	Required/Optional
Authorization	Bearer <token> used for authentication	string	Required.

Request Example

```
GET https://api.votiro.com/disarmer/api/disarmer/v4/status/
c94f00a4-7a36-4152-977d-dda71cccfb95
```

```
Authorization: "Bearer <token>"
```

7 Responses and Error Codes

Votiro uses conventional HTTP response codes to indicate the success or failure of an API request. In general, codes in the 2xx range indicate success, codes in the 4xx range indicate an error that failed because of the information provided (for example, a required parameter was omitted), and codes in the 5xx range indicate an error with Votiro's servers.

Table 12 Error Codes

Status Code	Code Value	Description
200	OK	The request was successful.
400	Bad Request	The request included a non-existent resource, for example, an incorrect <i>requestId</i> .
401	Unauthorized	Authentication failure due to incorrect service token. Recommended action: verify the service token.
404	Not Found	The request failed due to high load on the system. Recommended action: retry request.
409	Conflict	There was an issue with the request parameters. The response includes detailed error information.
429	Max InProgress Requests	Maximum number of concurrent sanitization requests are reached
500	Internal Server Error	The server failed to process the request.

An error response includes the following parameters:

Table 13 Error Response Parameters

Parameter	Description	Type
Errors	List of error description objects.	list
Errors [n] Description	The ASCII encoded file name. If the file was processed successfully, this is the file name. If the file was blocked, then the suffix <code>_blocked.pdf</code> is appended to the file name.	string

Error Response Example

```
"Errors": "Description": "File name is empty."
```

7.1 Response Data

Response Parameters

Table 14 Response Parameters

Parameter	Description	Type
Status	The status of the positive selection request	string

Positive Selection Request Statuses

Table 15 Positive Selection Request Statuses

Status Name	Description
NotExist	<p>The <i>requestId</i> of the file uploaded is not found. The <i>requestId</i> may be incorrect or the positive selection report data has been removed. The TTL for final statuses - Sanitization finished (Done, Blocked) is 3 minutes. After this period, if the end user sends a "GET status" request, the response received will be NotExist.</p> <p>Note: This status is not relevant for the sync-upload API.</p>
Processing	<p>The file you uploaded is being processed by Votiro Cloud.</p> <p>Note: This status is not relevant for the sync-upload API.</p>
Done	The file you uploaded is processed, and you can download the file.
Error	The file you uploaded was not processed because of an internal Votiro error.
Blocked	The file you uploaded was blocked in the positive selection process. Download the file for more information on why the file was blocked.

Response Example

"Done"

Report Events

Event codes respect the following 8-digit scheme:

L L R C C T T R

where L, R, C, T are digits [0-9].

- LL specifies the event main category.
- CC specifies the sub-category.
- TT specifies the specific event type.
- R is reserved for future use and must be ignored.

Examples

- 50020110 represents an Indicator event (LL=50) of category Suspicious Executable File (C=20), specifying that an executable artifact (TT=11) was found.
- 10000010 represents a Trace event (LL=10) of category FTD (C=00), specifying that a discovered file type (TT=01) was found.

Table 16 CEF Message Template Extensions

Category	Event Code	Sub-Category	Event Name	Event Description
Trace	10000010	File Type Discoverer	True File Type	File {FileName} recognized as {FileType}.
Trace	10020100	File Process	File Uploaded	File {FileName} upload for positive selection started.
Trace	10020130	File Process	Child Item Created	New child created for item {ParentItemId}. Child ID: {ChildId}.
Trace	10020110	File Process	Sanitization Complete	File {FileName} sanitization process successfully ended.
Trace	10020200	File Process	File Blocked	File {FileName} blocked as a result of the positive selection process.
Trace	10020300	File Process	Sanitization Timeout	Sanitization of the file {FileName} exceeded the time limit.
Trace	10050000	Blocker	Block - Unknown File (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process.
Trace	10050010	Blocker	Block - Large File (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process.
Trace	10050020	Blocker	Block - Complex File (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process.
Trace	10050030	Blocker	Block - Binary File (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process.

Category	Event Code	Sub-Category	Event Name	Event Description
Trace	10050040	Blocker	Block - Other Unsupported File (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process.
Trace	10050050	Blocker	Block - DDE (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process - DDE detected.
Trace	10050060	Blocker	Block - Macro (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process - Suspicious macro detected.
Trace	10050070	Blocker	Block - Suspicious URL (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process - Suspicious URL detected.
Trace	10050080	Blocker	Block - Password Protected (Policy)	File {FileName} blocked due to your organization policy violation [{Policy}] in the sanitization process - Password Protected File.
Trace	10050100	Blocker	Block - General (Policy)	File {FileName} blocked due to your organization policy violation {Policy} in the positive selection process.
Trace	10050500	Blocker	Block - Error	File {FileName} blocked due to an error in positive selection process.
Trace	10060100	Password Protected Opener	Password Opened	Password Protected File {FileName} successfully opened.
Trace	10060110	Password Protected Opener	Password Added	Password Protected File {FileName} successfully closes with original password.
Trace	10060200	Password Protected Opener	Wrong Password	Password Protected File {FileName} couldn't be opened.

Category	Event Code	Sub-Category	Event Name	Event Description
Trace	10080100	Validate Signature	Validate Signature Succeeded	Signature Validation for file {FileName} succeeded.
System	20060800	System Error	Fatal Error	System error occurred during handling request of file {FileName}.
System	21020100	Warning	Low Disk Space	The system is running on low disk space: Used {used} of {diskSize} ({usagePercent}%), available {available}
Indicator	50010000	Macro Analyzer	Suspicious Macro	Suspicious Office macro detected.
Indicator	50010010	Macro Analyzer	Auto Execution Macro	Suspicious Office macro detected [Auto Execution].
Indicator	50010020	Macro Analyzer	File System Activity Macro	Office macro detected [File System Activity].
Indicator	50010030	Macro Analyzer	Out Of Document Interaction Macro	Office macro detected [Out-Of-Document Interaction].
Indicator	50010040	Macro Analyzer	Suspicious Office Excel 4.0 Macro	Suspicious Office Excel 4.0 macro detected.
Indicator	50010050	Macro Analyzer	Suspicious File System Activity Macro	Suspicious Office macro detected [File System Activity].
Indicator	50010060	Macro Analyzer	Suspicious Out of Document Interaction Macro	Suspicious Office macro detected [Out-Of-Document Interaction].
Indicator	50020010	File Type Discoverer	Suspicious Fake File	Suspicious fake file [Extension does not match file structure] detected in the artifact.
Indicator	50020020	File Type Discoverer	Suspicious Unknown File	Unknown file [Data file or unidentified file type] detected in the artifact.
Indicator	50020110	File Type Discoverer	Suspicious Executable File	Executable file detected in the artifact.
Indicator	50020120	File Type Discoverer	Suspicious Script File	Script file detected in the artifact.
Indicator	50040010	Active Element	External Program Run Action	External Program Run Action detected in file {Filename}.

Category	Event Code	Sub-Category	Event Name	Event Description
Indicator	50050010	JavaScript Analyzer	Dynamic code execution	Dynamic code execution detected in file {Filename}.
Indicator	50060010	Suspicious URL	Suspicious URL detected	Suspicious url detected in file {FileName}, URLs: {SuspiciousUrlsList}
Indicator	50065010	Xml Bomb	Xml Bomb detected	Xml Bomb detected.
Indicator	50070050	Suspicious File Structure	Suspicious File Structure	Suspicious structure detected in file {FileName}
Indicator	50075050	Svg Bomb	Svg Bomb detected	Svg Bomb detected.
Indicator	50090200	Validate Signature	Validate Signature Failed	Signature Validation for file {FileName} failed.
File Process	60020010	File Process	Publish Complete	File {FileName} published.
File Process	60020020	File Process	Publish Original Complete	File {FileName} original published.

8 Getting Service Information

GET `https://<votiro_appliance>/disarmer/api/disarmer/v4/about`

Generates a file that details the API version and Votiro Cloud version of the system.

8.1 Request Data

Request Header Parameters

Request parameters are case sensitive.

Table 17 Request Header Parameters

Parameter	Description	Type	Required/Optional
Authorization	Bearer <token> is used for authentication	string	Required

Request Example

GET `https://api.votiro.com/disarmer/api/disarmer/v4/about`

Authorization: "Bearer <token>"

8.2 Response Data

Response Parameters

Table 18 Response Parameters

Parameter	Description	Type
ApiVersion	The Votiro Cloud for Web Applications version	string

Response Example

"Votiro Cloud for Web Applications Ver: 4"

Appendix A Sample Code - Sync-upload

To manage sync-upload requests in your environment, optional content changes to the file can be made.

```
using System;

using System.IO;

using System.Net.Http;

using System.Net.Http.Headers;

using System.Threading.Tasks;

namespace ApiClientSample
{
    static class Program
    {
        static void Main()
        {
            string disarmerAddress = "https://support-
va/disarmer/api/disarmer/v4/upload-sync"; //Reference 1

            string bearerToken =

                "eyJhbGciOiJSUzI1NiIsImtpZCI6IiwQTVFNEZFMDE5QjA3RDhCMzkw
RTFFFRkYyRjQ1ODZGMTQzODUwQjciLCJ0eXAiOiJKV1QiLCJ0eXkiOiJ1bmlxdW
VfbmFtZSI6Im9tcm10ZXN0aW5ncG9zdG1hbiIsImdyb3Vvc2lkIjoiaW9
0aXJvSW50ZXJuYWxTZXJ2aWNlcyIsInJvbGUiOiJBZG1pbmlzdHJhdG9y
IiwianRpIjoiaW50VWVtMjItNDk2YS00M2Y5LWFMNDAtMjAzZDQyNTRlN
GMwIiwibmJmIjozNTk1MTQyNjc0LCJleHAiOjE4ODAxMzk2MDAsImhhdC
I6MTU5NTE0MjY3NH0.TCheBCwie4heCf4v8cIOJ-
aT9gbVYyvmvFPQoloQWUet5xyp08setMk8pTCPIgF3hWfhgo0MU22EVAH
Zn506oFGF7KUeNQk2LAQMFqXaNUG1b3D2Xlmn5PNG-GVxvWbageqXC-
5bDtXAsPV0QFjV0n10tYXyKnWIgmbXErgbXzCiRFhrDeEew1FuvW_
VU6HEH6sCdkig1GnL0Q_-05vdOqKwk5WUFRyT2S5VR5rxO_
ezWKLfMTJXPUTJl2sBDLiuk_
qLmWXep7LUy6fzuSPScEsWqShpWT6fl2BEpSeqmItVjMaLOVUN8KhKgSk
TTzACTAGa8zWuwncJ0PdmIXTKUg"; //Reference 2

            string filePath =
                @"C:\Users\omri.matari\Downloads\virtual-systems-
datasheet.pdf"; //Reference 3

            UploadFile(filePath, bearerToken, disarmerAddress).Wait
();
        }
    }
}
```

```
private static async Task UploadFile(string filePath,
string bearerToken, string disarmerAddress)
{
    using (Stream fileStream = File.OpenRead(filePath))
    {
        var formData = new MultipartFormDataContent
        {
            {
                new StreamContent(fileStream),
                "file",
                Uri.EscapeDataString(Path.GetFileName(filePath))
                //Support spaces + any non-english characters in
                FileName
            },
            {
                new StringContent("{\"PolicyName\":\"Default
Policy\", \"ChannelType\":\"FileConnector\", \"Chann
elId\":\"30acc6eb-16d9-4133-ae43-
0f5b6d40a318\", \"ChannelName\":\"API\"}"), //
Reference 4
                "properties"
            }
        };
        using (formData)
        {
            using (var client = new HttpClient())
            {
                client.DefaultRequestHeaders.Authorization = new
                AuthenticationHeaderValue("Bearer", bearerToken);
                HttpResponseMessage httpResponseMessage = await
                client.PostAsync(disarmerAddress, formData)
                .ConfigureAwait(false);
                httpResponseMessage.EnsureSuccessStatusCode();
                string result = await
                httpResponseMessage.Content.ReadAsStringAsync()
            }
        }
    }
}
```


Appendix B Votiro API Postman Collection

```

{
  "info": {
    "_postman_id": "c0e3ca52-5f6b-4cec-a7c7-bf9f9f6cc678",
    "name": "Votiro SaaS API Customer Version",
    "schema": "https://schema.getpostman.com/json/collection/v2.1.0/collection.json"
  },
  "item": [
    {
      "name": "UPLOAD FILE:
      https://prod.us.paralus.votiro.com/disarmer/api/Disarmer/v4/upload",
      "request": {
        "auth": {
          "type": "bearer",
          "bearer": [
            {
              "key": "token",
              "value": "",
              "type": "string"
            }
          ]
        },
        "method": "POST",
        "header": [
          {
            "key": "Properties",
            "value": "{\\"ChannelType\\":\\"FileConnector\\",\\"ChannelId\\":\\"30acc6eb-16d9-4133-ae43-0f5b6d40a318\\",\\"ChannelName\\":\\"Postman\\",\\"PolicyName\\":\\"API\\"}"
          }
        ]
      }
    }
  ]
}

```

```
        "type": "text",
        "disabled": true
    },
    {
        "key": "Authorization",
        "value": "",
        "type": "text",
        "disabled": true
    }
],
"body": {
    "mode": "formdata",
    "formdata": [
        {
            "key": "file",
            "type": "file",
            "src": []
        },
        {
            "key": "properties",
            "value": "{\
\"ChannelType\": \"FileConnector\", \"ChannelId\": \"30acc6eb-16d9-4133-ae43-0f5b6d40a318\", \"ChannelName\": \"Postman\", \"PolicyName\": \"API\"}",
            "type": "text"
        }
    ]
},
"url": {
    "raw": "https://prod.us.paralus.votiro.com/disarmer/api/Disarmer/v4/upload",
    "protocol": "https",
```

```
    "host": [
      "prod.us.paralus.votiro.com"
    ],
    "path": [
      "disarmer",
      "api",
      "Disarmer",
      "v4",
      "upload"
    ]
  }
},
"response": []
},
{
  "name": "UPLOAD-SYNC FILE:
https://prod.us.paralus.votiro.com/disarmer/api/Disarmer/v4
/upload-sync",
  "protocolProfileBehavior": {
    "disabledSystemHeaders": {}
  },
  "request": {
    "auth": {
      "type": "bearer",
      "bearer": [
        {
          "key": "token",
          "value": "",
          "type": "string"
        }
      ]
    }
  },
}
```



```
"method": "POST",
"header": [
  {
    "key": "ContextIdentifier",
    "type": "text",
    "value": "Postman",
    "disabled": true
  },
  {
    "key": "Properties",
    "type": "text",
    "value": "{\
    \"ChannelType\": \"FileConnector\",
    \"ChannelId\": \"30acc6eb-16d9-4133-ae43-0f5b6d40a318\",
    \"ChannelName\": \"Postman\",
    \"PolicyName\": \"API\"
  }",
    "disabled": true
  },
  {
    "key": "Authorization",
    "type": "text",
    "value": "",
    "disabled": true
  }
],
"body": {
  "mode": "formdata",
  "formdata": [
    {
      "key": "file",
      "type": "file",
      "src": []
    },
  ],
}
```

```
{
  "key": "properties",
  "value": {
    "\ChannelType\":"FileConnector\","\ChannelId\":"
    "30acc6eb-16d9-4133-ae43-
    0f5b6d40a318\","\ChannelName\":"Postman\","\Polic
    yName\":"API\}"
  },
  "type": "text"
}
],
},
"url": {
  "raw":
  "https://prod.us.paralus.votiro.com/disarmer/api/Disarm
  er/v4/upload-sync",
  "protocol": "https",
  "host": [
    "prod.us.paralus.votiro.com"
  ],
  "path": [
    "disarmer",
    "api",
    "Disarmer",
    "v4",
    "upload-sync"
  ]
}
},
"response": []
},
{
  "name": "GETSTATUS:
  https://prod.us.paralus.votiro.com/disarmer/api/disarmer/v4
  /status/[ItemID]",
  "protocolProfileBehavior": {
```

```
"disableBodyPruning": true,
"disabledSystemHeaders": {
  "accept-encoding": true,
  "connection": true
}
},
"request": {
  "auth": {
    "type": "bearer",
    "bearer": [
      {
        "key": "token",
        "value": "",
        "type": "string"
      }
    ]
  },
  "method": "GET",
  "header": [],
  "body": {
    "mode": "formdata",
    "formdata": []
  },
  "url": {
    "raw":
      "https://prod.us.paralus.votiro.com/disarmer/api/disarm
      er/v4/status/[ItemID]",
    "protocol": "https",
    "host": [
      "prod.us.paralus.votiro.com"
    ],
    "path": [
```

```
        "disarmer",
        "api",
        "disarmer",
        "v4",
        "status",
        "[ItemID]"
    ]
}
},
"response": []
},
{
    "name": "REPORT:
https://prod.us.paralus.votiro.com/disarmer/api/disarmer/v4
/report/[ItemID]",
    "protocolProfileBehavior": {
        "disableBodyPruning": true,
        "disabledSystemHeaders": {
            "accept-encoding": true,
            "connection": true
        }
    },
    "request": {
        "auth": {
            "type": "bearer",
            "bearer": [
                {
                    "key": "token",
                    "value": "",
                    "type": "string"
                }
            ]
        }
    }
}
```

```
    },
    "method": "GET",
    "header": [],
    "body": {
      "mode": "formdata",
      "formdata": [
        {
          "key": "",
          "value": "d15ebe79-adc1-43d8-afc8-7588c8779f79/report",
          "type": "text"
        }
      ]
    },
    "url": {
      "raw":
      "https://prod.us.paralus.votiro.com/disarmer/api/disarmer/v4/file/report/[ItemID]",
      "protocol": "https",
      "host": [
        "prod",
        "us",
        "paralus",
        "votiro",
        "com"
      ],
      "path": [
        "disarmer",
        "api",
        "disarmer",
        "v4",
        "report",
        "[ItemID]"
      ]
    }
  }
}
```

```
    ]
  }
},
"response": []
},
{
  "name": "GETFILE:
https://prod.us.paralus.votiro.com/disarmer/api/disarmer/v4
/download/[ItemID]",
  "protocolProfileBehavior": {
    "disableBodyPruning": true
  },
  "request": {
    "auth": {
      "type": "bearer",
      "bearer": [
        {
          "key": "token",
          "value": "",
          "type": "string"
        }
      ]
    },
    "method": "GET",
    "header": [],
    "body": {
      "mode": "formdata",
      "formdata": [
        {
          "key": "",
          "value": "ccf9c4a7-d350-45e5-ab07-99b66ec355e0",
          "type": "text"
        }
      ]
    }
  }
}
```

```
    }
  ]
},
"url": {
  "raw":
    "https://prod.us.paralus.votiro.com/disarmer/api/disarmer/v4/download/[ItemID]",
  "protocol": "https",
  "host": [
    "prod",
    "us",
    "paralus",
    "votiro",
    "com"
  ],
  "path": [
    "disarmer",
    "api",
    "disarmer",
    "v4",
    "download",
    "[ItemID]"
  ]
}
},
"response": []
}
],
"event": [
  {
    "listen": "prerequisite",
    "script": {
```

```
        "type": "text/javascript",
        "exec": [
            ""
        ]
    },
    {
        "listen": "test",
        "script": {
            "type": "text/javascript",
            "exec": [
                ""
            ]
        }
    }
]
```