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1 Overview

1.1 Purpose

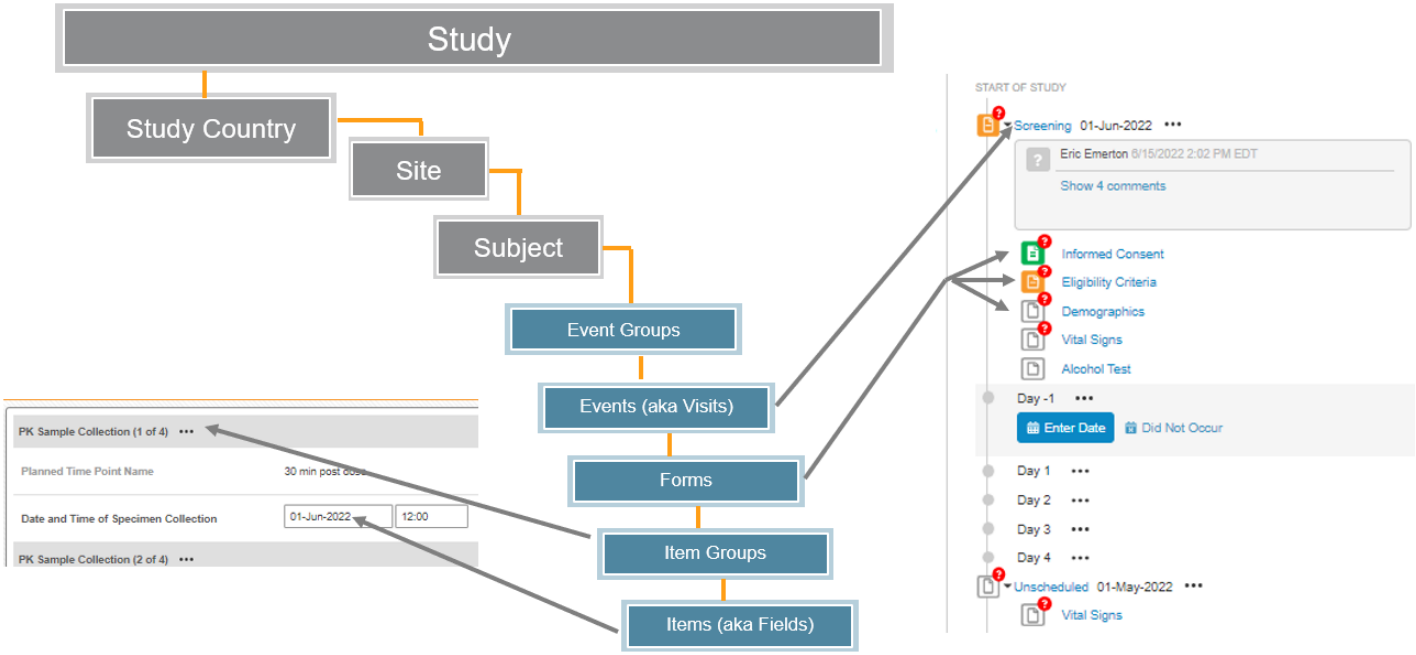
This document serves as an extended guide, supplemental to the API developer website for Veeva Vault CDMS API. Best practices, cause/effect examples are given here, whereas the online help is quicker reference with typically few/one example(s). Refer to the **Best Practices** chapter at the end of this document, and **TIP** entries are also given inline with the examples.

1.2 Reference URLs

https://developer-cdms.veevavault.com/api/23.2/	As of Veeva Vault release 23.2, this is the main CDMS API reference (subjects, events, forms, etc.) **NOTE**: As new major Vault CDMS releases occur (April, August, December each year), the documentation link for newer API version is the same, but with new XX.Y (year.release number)
https://developer.veevavault.com/	General home page for Veeva Vault developers
https://developer.veevavault.com/docs/#rest-api	Quick start guide for general Veeva Vault API
https://developer.veevavault.com/api/23.2/	Platform Vault API reference as of this release. General Vault concepts used by any vault application (logs, FTP, documents, etc.) are outlined

1.3 CDMS Hierarchy

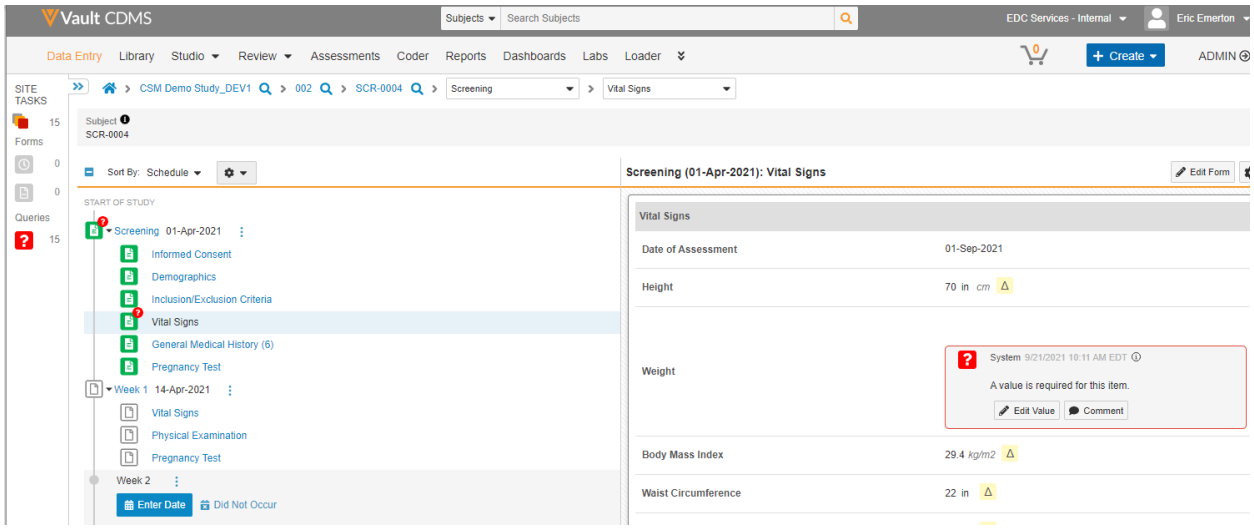
The CDMS data hierarchy / terminology is summarized by:



- Access within a study follows the **Study Country -> Site** hierarchy, i.e. which **sites** a user can see. A Data Manager might have access to all, a regional CRA some countries but not all, and site users just their specific site
- Once in a subject, the components of data follow largely an ODM CDISC model (Visits/Forms/Item Groups/Items), where 'Event' = 'Visit'. There is an additional layer for Event Groups to cover repeating cycles of events/visits as one unit.

Referring to the below UI example…

- Study = **CSM Demo Study_DEV1**
- Study Country = (not pictured, **United Status**, a relationship to the site)
- Site = **002**
- Subject = **SCR-0004**
- Event Group = (not pictured). A group of events (aka visits) are organized into an event group to better facilitate repeating cycles, unscheduled events.
- Event = **Screening**
- Form = **Vital Signs** (details, right side of screen)
- Item Group = **Vital Signs** (group of fields on a CRF, used for repeating when necessary)
- Items = **Date of Assessment** (date field), **Weight** (unit codelist field), etc.



- **WARNING**: The pictured elements in the EDC UI are **LABELS**, not the parameters necessary to interact through the API. The CDMS API operates with design **NAMES** for push of data in, and has a few (albeit) rare cases where labels are returned.

- Depending on the API endpoint these components are usually required to identify the subject, then the location in the casebook / CRFs of the subject. Some endpoints allow a 'by ID' update, the internal Vault ID, instead of a Study Country / Site / Subject / Event Group / Event… combination. (but not all)

- How does one get the proper parameters for these design elements? The team that built the study should relay this information via **Study Design Specifications (SDS)** document generated from the Vault CDMS **Studio** module. At later API releases, there will be a design level API to get this information of names <-> labels, plus supporting properties at all design levels, and for each casebook definition.

- Continuing with the example pictured above, the **SDS (workbook) -> Schedule – Tree** tab of the SDS:

A	B	C	D	E	F	G	H	I
Caseboo	Event Group	Event Group Name	Event	Event Name	Form	Form Name	Restricte	Repea
1								
1	**Screening**	**eg_SCREENING**						**No**
1	**Screening**	**eg_SCREENING**	**Screening**	**ev_SCREENING**				**No**
1	Screening	eg_SCREENING	Screening	ev_SCREENING	Informed Consent	IC	No	No
1	Screening	eg_SCREENING	Screening	ev_SCREENING	Demographics	DM	No	No
1	Screening	eg_SCREENING	Screening	ev_SCREENING	Inclusion/Exclusion Criteria	IE	No	No
1	Screening	eg_SCREENING	Screening	ev_SCREENING	Vital Signs	VS	No	No
1	Screening	eg_SCREENING	Screening	ev_SCREENING	General Medical History	MH	No	Yes
1	Screening	eg_SCREENING	Screening	ev_SCREENING	Pregnancy Test	LB_PREG	No	No
1	**Treatment**	**eg_TREATMENT**						**No**
1	**Treatment**	**eg_TREATMENT**	**Week 1**	**ev_WEEK1**				**No**
1	Treatment	eg_TREATMENT	Week 1	ev_WEEK1	Vital Signs	VS2	No	No
1	Treatment	eg_TREATMENT	Week 1	ev_WEEK1	Physical Examination	PE	No	No

…tells us the Event Group, Event, Form design names for the example given.

- Event Group = **eg_SCREENING**
- Event = **ev_SCREENING**
- Form = **VS**

- Item group design names, item design names are then found on the Form Definitions tab:

F	G	H	I	J	K	L	M	N	O	P
Item Group	Item Group Label	IG Re	Header Visible	Visual	RM	IG	Item Name	External ID	Label	Data Type
								VS		
VS	Vital Signs	No	Yes	Yes				VS		
VS	Vital Signs						VSDAT_2	VSDAT	Date of Assessment	Date
VS	Vital Signs						HEIGHT	HEIGHT	Height	Unit
VS	Vital Signs						WEIGHT	PL_WEIGHT	Weight	Unit
VS	Vital Signs						BMI	BMI	Body Mass Index	Number
VS	Vital Signs						WSTCIR	WSTCIR	Waist Circumference	Unit
VS	Vital Signs						VSPOS	VSPOS	Position	Codelist
VS	Vital Signs						SYSBP	SYSBP	Systolic Blood Pressure	Number
VS	Vital Signs						DIABP	DIABP	Diastolic Blood Pressure	Number
VS	Vital Signs						HR	HR	Heart Rate	Number
VS	Vital Signs						RESP	RESP	Respiratory Rate	Number
VS	Vital Signs						TEMP	TEMP	Body Temperature	Unit
								MH		
MH	General Medical History	No	Yes	Yes				MH		

…which indicates:

- Item Group = **VS**
- Items = **VSDAT_2, HEIGHT, WEIGHT, BMI…**

1.4 CDMS API Summary

- The Vault API is REST based. The vast majority of the API endpoints use URL parameters or JSON request bodies, return JSON response bodies (unless a file or log download)
- General vault API includes a JSON return structure like:

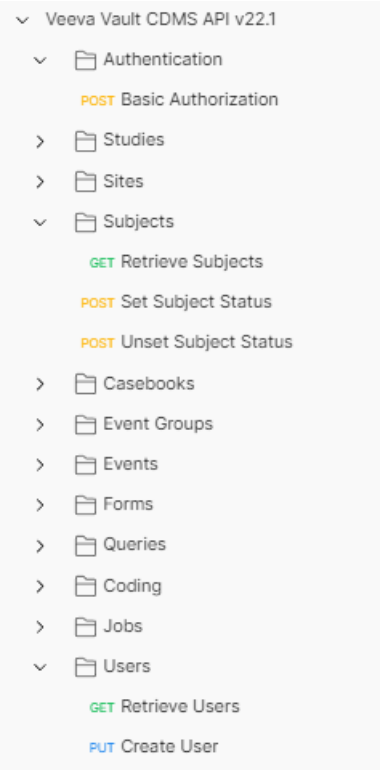
```
{
    "responseStatus": "SUCCESS",
    "responseDetails": {
        "pagesize": 1000,
        "pageoffset": 0,
        "size": 131,
        "total": 131
    },
    "data": [
```

.. with **responseStatus** returning the overall request status. Most Vault APIs have paging, with total, limit, offset, and URLs to the 'next' / 'previous' page of data (of a query/request).

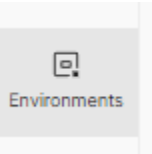
- CDMS API endpoint are very 1 to 1 with the actions / buttons seen in the UI. As example, if the intent is to add a subject, plus data to some forms in a screening visit, then APIs must be called for each of (potentially) - (a) Add subject (b) Set subject status (c) Set event date (first event for subject) (d) Set of data on form (with add item groups on the form if/when necessary (e), Finally the submit of the form. The sequencing of these calls is vitally important. Currently, many actions are not rolled into fewer API calls, via parameters. (e.g., set data on a form, plus submit it, as one call). Consolidated API calls to accomplish multiple actions are in consideration for future releases all the time.
- CDMS specific errors – most examples are here: https://developer-cdms.veevavault.com/api/23.2/#errors-cdms

1.5 Postman Collection

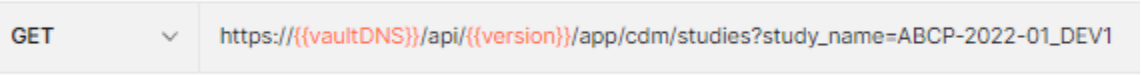
Any REST endpoint tool can be used for experimenting as part of API development. This guide will show examples using Postman. Each API release includes a Postman collection, downloadable from the developer API website. As example of a postman collection:



The use of a postman collection requires setting of an environment profile:

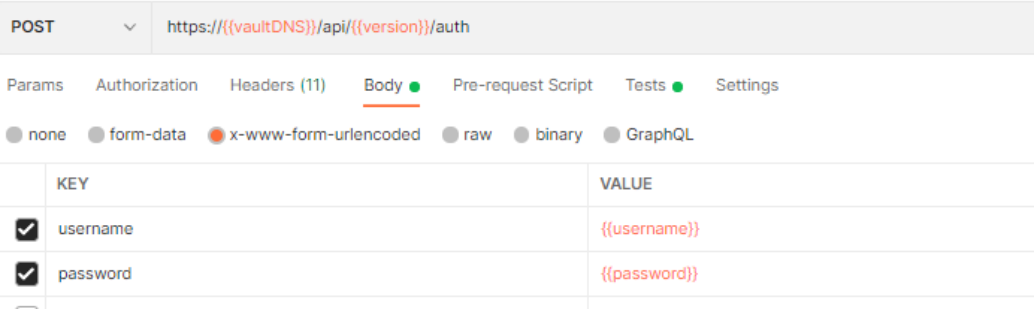


... to change between variables with in the collection, e.g. {{vaultDNS}} below (the URL for your vault), {{version}} (e.g. **v23.2** for this release):

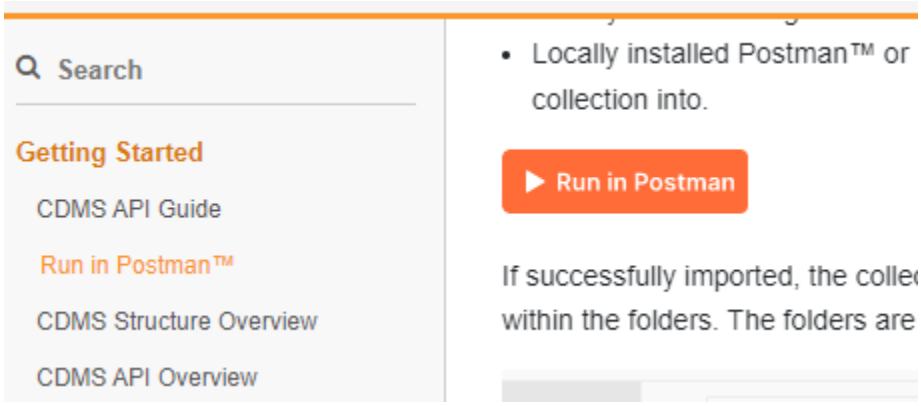


If your vault URL is, as example, **https://edc-services-internal.veevavault.com/...** , then the portion **edc-services-internal.veevavault.com** is what is used for the vaultDNS variable above.

Further, your username / password to the vault are environment variables used in the Authentication endpoint:



The postman collection can be imported from the help website, **Run in Postman** section:



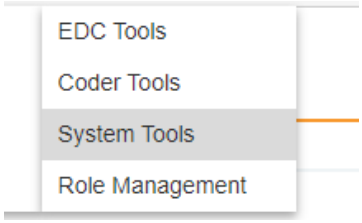
The **Run in Postman** button will lead you through getting the collection imported to your local Postman workspace, or Postman for Web workspace (if you have one).

1.6 Rate Limits / Caveats

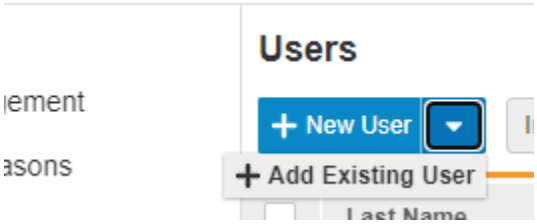
- **WARNING:** There are API limits vault wide, as well as by user, to protect the vault. These are general vault platform specific, not necessarily applicable because of Vault CDMS. Earlier releases (< 21R1) have hard limits for each 5-minute window, plus a 24-hour daily limit for all users of the vault. For later versions, vault will slow down response times as the rate limits are hit. There is **also** a limit on the number of API logins in any single calendar minute (20). Do not re-authenticate with each API call. More information at https://developer-cdms.veevavault.com/api/23.2/#api-rate-limits
- **WARNING:** Many API returns will include a '**SUCCESS'** at the top level, that is the to/from the server was OK. But the body of the return must be parsed / inspected to see if there are any errors on the attempt. Do not assume top level success for pushing data to CDMS means it was fully successful! Most API actions into the system (update/insert data) are done in batch API requests, so each section should be inspected for its success/failure (not just the overall request status)
- **WARNING:** The CDMS API is built on top of the vault API, which allows raw VQL'ing to any object, fields that the user has rights to read. It is strongly **discouraged** to use raw object retrievals for reverse engineering of the data. Doing so will likely result in a job / code being tripped up at some later release when that data model changes. All attempts should be made to use the formal endpoints for data retrieval / updates into a study.

1.7 API Roles / Access

A user with Security Profile **Vault Owner** can use the API, the entire system in fact, in all ways. Other users are given access just like any other study user, with a specific role in that study. Users with rights to administer study users navigate to the **System Tools** area:



.. from which, one then creates a user (or add/apply an existing user on the Vault domain):



The access granted for a study on new user / apply existing user has multiple options for **Study Access** (2nd part of pictured):

Back to Users

New User

Details

Last Name: API Account

First Name: My

User Name: my_api_account @edc-services.com

Email: eric.emerton@veeva.com

Federated ID:

Security Policy: No Password Expiration

Add as Principal Investigator: Yes No

Study Access

Grant Access to All Studies: Yes No

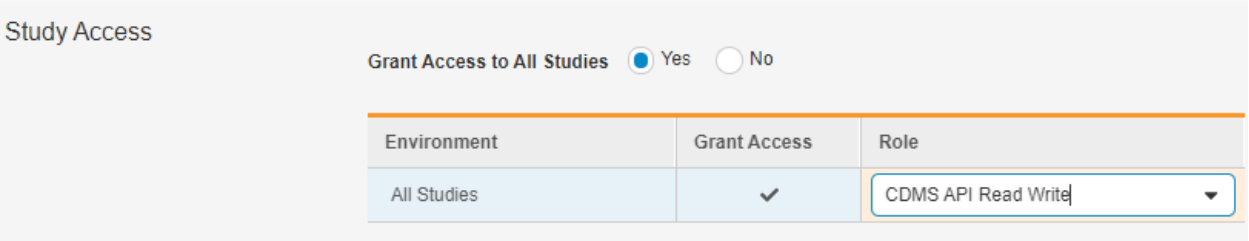
Accessible Studies + Add Studies

Search

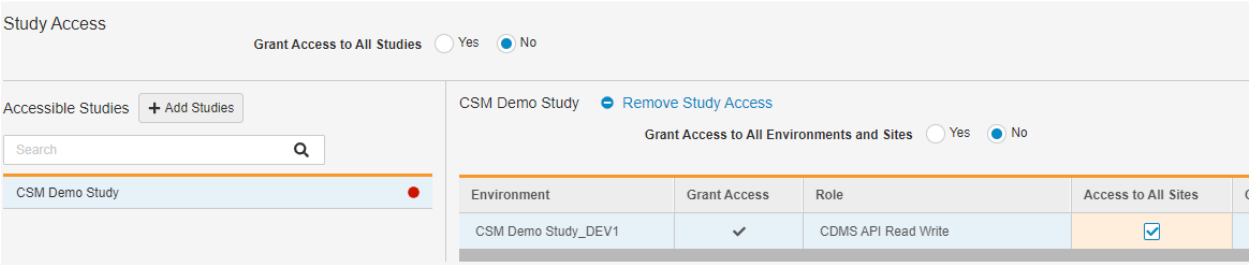
No accessible studies

Select a study to configure access

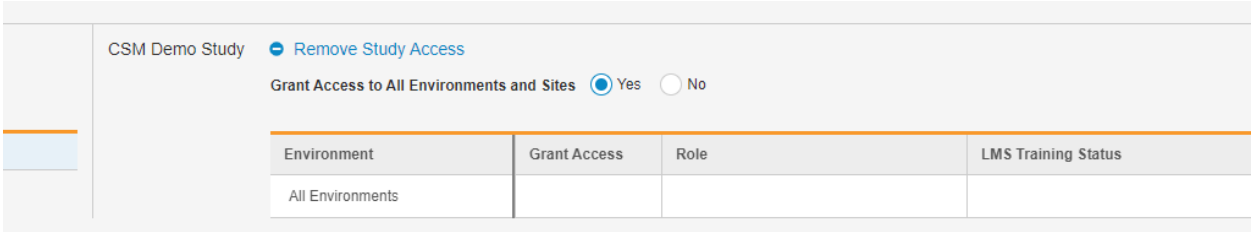
Option A: Access to all studies now, **AND** in the future: (less common)



Option B: Specific study / environment (note the **Access to All Sites = checked**, otherwise specific sites/countries):



Option C: Use **Grant Access to All Environments and Sites** = Yes. This is equivalent to **Access to All Sites**, but for all instances in the vault for the study. This is most applicable in a UAT vault where there are UAT1, UAT2, UAT3, etc. under one study umbrella. In a production or dev vault it has the same effect as Option B.



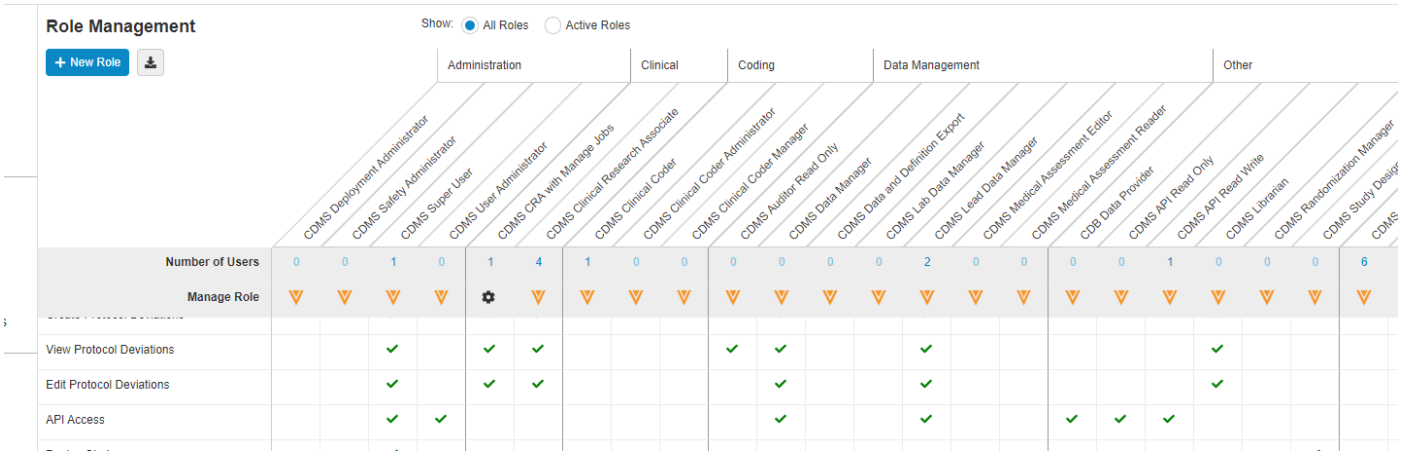
TIP: Consider only ever granting an API user the access / studies it needs, when needed for Production. In a UAT / Dev vault, access to all studies, or all instances of a study might be appropriate, unless the API user is for a partner / vendor company (e.g., IRT developing integrations)

WARNING: An API user is no different from any other study user. Typically, users must go through / pass a training before their study access is truly enabled. For an API / system user, ensure to check the Ignore LMS Status, Assume Trained attribute, otherwise the API user won't find the study (or studies) intended

	LMS Training Status	Ignore LMS Status, Assume Trained
		☑

1.8 Vault Permission Sets / Roles

Vault CDMS resides on the Vault Platform and uses Vault Application Roles and Permission Sets for the basis of what a user can / cannot do. Should a custom role be setup (example: to also access a custom object / area), then the role needs to be setup with the API access permission, usually attainable with Vault CDMS's **Tools -> System Tools -> Role Management** grid, simply ensuring the API Access line checked for the new custom role:



What follows in the rest of this section is the details on Vault level roles/permission sets. The key to a user being able to use the API on a study (or studies) is a permission set in their study role:

Name	Status	Source	Description
API Access	Active	Standard	CDMS Permission Set for API access

.. is necessary for using the API. This permission set is standard to CDMS and will either be included in a standard CDMS role, or custom CDMS role. The API user then is granted the role, with a study (or studies) as necessary

Should custom permission sets be setup in a vault, the key for API'ing is / are these settings:

Permission Sets >
API Access

Details | Admin | Application | Objects | Tabs | Pages | EDC

Vault Actions

	All Vault Actions
Vault Actions	

	All	Read Dashboards and Reports	Create Dashboards	Delete Dashboards	Share Dashboards	Schedule Reports	Administer Dashboards	Display Public Key Dashboards	Read Group Membership
Dashboards and Reports									

	All Workflow	Start	Participate	Read and Understand	eSignature	Query
Workflow						

	All Workflow Admin	Cancel	View Active	Reassign	Update Participants	Email Participants	Update Workflow Dates	Replace Workflow Owner
Workflow Administration								

	All API	Access API	Events API	Metadata API
API		✓		✓

	Manage Tags	Merge Anchors	Remove Annotations	Manage Anchors

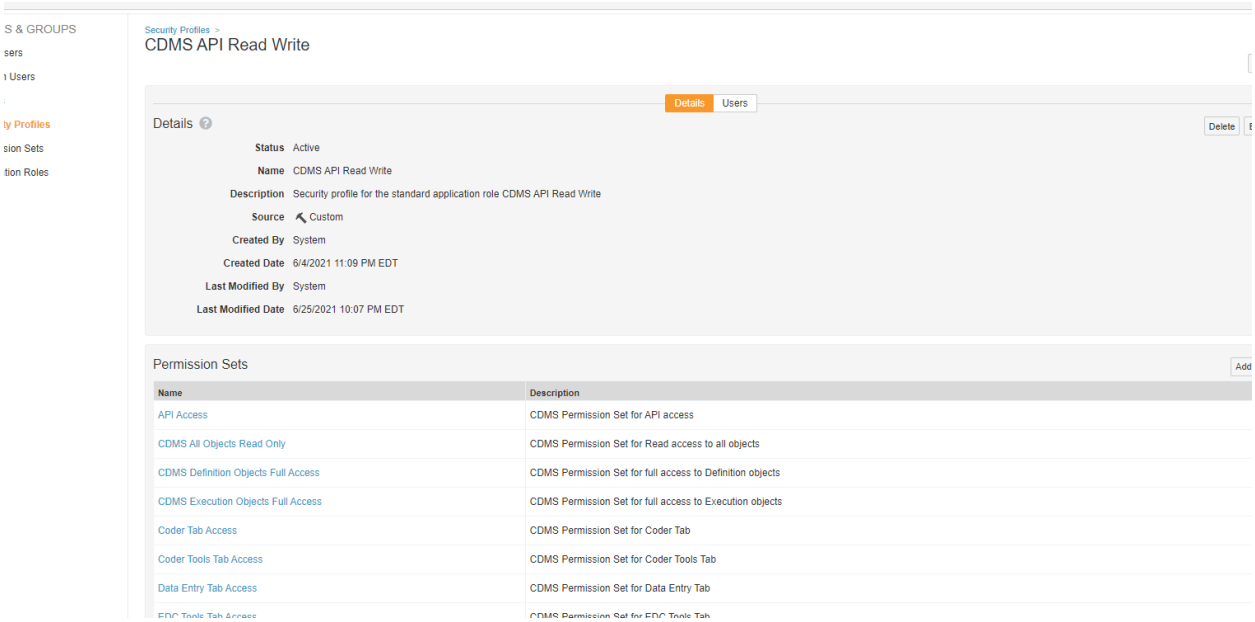
As well as:

Audit Trail

	Access
File Staging	✓

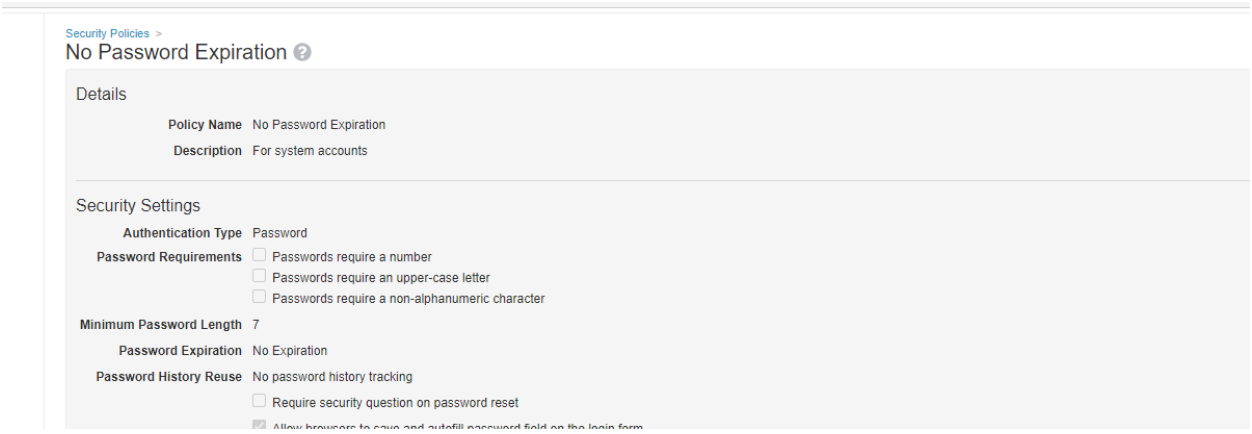
	Edit Document Matches
EDL Matching	

Together with base Vault settings for using its API (CDMS or any other Vault application), the other permission sets are CDMS specific. As example, a role **CDMS API Read Write** (custom), has the **API Access** permission set, plus relevant CDMS role



TIP: Consider using the built in API roles (**Standard**) for API users. Custom roles are usually made as clones of a standard role, with additive permissions to other areas, usually custom objects / tabs.

TIP: Consider using a Security Policy in the vault with no password expiration, so that API accounts do not suddenly run into password expiration during their use/runs. Below is a security policy named 'No Password Expiration', with the specific '**No Expiration**' property set.



2 Authentication / API Login

Help Main	https://developer-cdms.veevavault.com/api/23.2/#authentication
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/studies
Parameters	• username • password (these parameters are part of form-data post style)

Notes	• For login to the vault, get an API session.
	• For Basic authorization (e.g. username / password passed)
	• Other style login, using non-Basic authentication, see: https://developer.veevavault.com/api/23.2/#oauth-2-0-openid-connect
	• Some older vault versions allowed a GET style with username / password. This has been disallowed in later versions (must use a **POST**). Even with older versions, it's strongly recommended **NOT** to use a GET style.
	• An account to Veeva Vault is on a **domain**, which is one or more **vaults**. The above example, the user is on the **eke.com** domain with the Veeva Vault infrastructure and has access to two vaults on that domain.
	• Above, the vaults the user has access to are returned, with parameters for id, name, URL of those vault locations. A **vault** is one to one with a URL – each of the two vaults above will have their own studies. (multiple studies reside in one vault)
	• Note the **vaultId** return of the JSON at **top** level, this refers to the active vault on login. (vault ID = 31762).
	• Accounts to vault(s) follow:
	  ○ Non-production **domain**: UAT, Training, Dev vaults. □ one account
	  ○ Production domain where production study vaults reside. □ 2nd, different account

Examples

Description / Request	Response
Successful Login	

…/api/v23.2/auth
 	
(with post parameters for username / password, in this case user name: eric.emerton@eke.com)
	{
	"responseStatus": "SUCCESS",
	"sessionId": "32735BDA5964E3F43C4F73F6109EFB1E2DCA8A2C1AAEB6B56C44822ADF36EE5C037A5DB751ED8AE924BC4A38EDE92CCB652F136A4AD59C7BB8490F170E514A44",
	"userId": 92677,
	"vaultIds": [
	{
	"id": 1004329,
	"name": "EDC-QA-FAST-EKE",
	"url": "https://eke-vvqa1-10.vaultdev.com/api"
	},
	{
	"id": 1004330,
	"name": "EDC-QA-SLOW-EKE",
	"url": "https://eke-vvqa1-9.vaultdev.com/api"
	}
	],
	"vaultId": 1004330
	}

Bad User and/or password	

…/api/v23.2/auth	{
	"responseStatus": "FAILURE",
	"responseMessage": "Authentication failed for user [eric.emerton@eke.com]",
	"errors": [
	{
	"type": "USERNAME_OR_PASSWORD_INCORRECT",
	"message": "Authentication failed for user: eric.emerton@eke.com."
	}
	],
	"errorType": "AUTHENTICATION_FAILED"
	}

Session timed out	
	{ "responseStatus": "FAILURE", "errors": [{ "type": "INVALID_SESSION_ID",

Description / Request	Response
	"message": "Invalid or expired session ID." }] }

- The key portion of a successful authentication return is the **sessionId** parameter:


```
    "responseStatus": "SUCCESS",
    "sessionId":
"32735BDA5964E3F43C4F73F6109EFB1E2DCA8A2C1AAEB6B56C44822ADF36EE5C037A5DB751ED8AE924
BC4A38EDE92CCB652F136A4AD59C7BB8490F170E514A44",
    "userId": 92677,
```


.. as it must be passed in the header of all subsequent requests of the API session.

3 Studies

3.1 Retrieve Studies

<table>
<tr><td>Help Main</td><td>https://developer-cdms.veevavault.com/api/23.2/#retrieve-studies</td></tr>
<tr><td>Style</td><td>GET</td></tr>
<tr><td>Endpoint</td><td><your Vault URL>/api/v23.2/app/cdm/studies</td></tr>
<tr><td>Parameters</td><td>
<table>
<tr><th>Name</th><th>Req/Opt</th><th>Notes</th></tr>
<tr><td>limit</td><td>Optional</td><td>Pagination API - different limit from the default 1000 can be used</td></tr>
<tr><td>offset</td><td>Optional</td><td>Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd</td></tr>
</table>
</td></tr>
<tr><td>Notes</td><td>

Used to retrieve the list of studies in the vault
The casebook versions JSON array within each study entry enumerates all current casebook versions of the study. The casebook versions are assigned at add subject/casebook, per an active version at the subject’s site. Later, during amendments, a subject / site / entire study can transition from one version to the next.
ONLY the studies the user has rights to are returned
WARNING: If a user requires training (their role) in the vault, the study will not exist in API returns. Ensure API roles are configured to not be blocked by LMS restrictions
WARNING: The study_name value is what is used for all other requests into / out of CDMS. On rare occasions, the value can be out of sync with the visual study label seen on screen in the UI. For example, in a UAT vault the 6th UAT might be StudyName_UAT6 for study_name, but visually on screen StudyName_CandidateForLive.

</td></tr>
</table>

Examples

Description / Request (URL)	Response
Get All Studies	

…/api/v23.2/app/cdm/studies
 	
(no parameters on the URL)
	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 2,
	"total": 2
	},
	"studies": [
	{
	"study_name": "Labrinone_DEV1",
	"external_id": "Labrinone",
	"study_phase": "Phase III",
	"study_status": "Execution",
	"casebook_versions": [
	{
	"study_name": "Labrinone_DEV1",
	"casebook_version": 1,
	"version_name": "Initial Version",
	"external_id": "1",
	"previous_version_name": null,
	"description": null,
	"change_reason": null,
	"casebook_status": "in_progress__v",
	"created_by": "Eric Emerton",
	"created_date": "2018-02-12T22:32:21Z",
	"last_modified_date": "2020-03-04T14:16:20Z"
	}
	]
	},
	{
	"study_name": "ABCP-2022-01_DEV1",
	"external_id": "ABCP-2022-01",
	"study_phase": "Phase II",
	"study_status": "Locked",
	"casebook_versions": [
	{
	"study_name": "ABCP-2022-01_DEV1",
	"casebook_version": 2,
	"version_name": "2",
	"external_id": "2",
	"previous_version_name": null,
	"description": null,
	"change_reason": "For amendment to study",

Description / Request (URL)	Response

	"casebook_status": "published__v",
	"created_by": "Eric Emerton",
	"created_date": "2022-02-21T22:32:21Z",
	"last_modified_date": "2022-02-21T14:16:20Z"
	},
	{
	"study_name": "ABCP-2022-01_DEV1",
	"casebook_version": 1,
	"version_name": "Initial Version",
	"external_id": "1",
	"previous_version_name": null,
	"description": null,
	"change_reason": null,
	"casebook_status": "published__v",
	"created_by": "Eric Emerton",
	"created_date": "2022-01-13T22:32:21Z",
	"last_modified_date": "2022-01-13T14:16:20Z"
	}
	]
	}
	]
	}

4 Countries

4.1 Retrieve Countries

Help Main	**WARNING: No CDMS formal endpoint for this yet, instead use of base Vault VQL is shown.**
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/query?q=SELECT id,abbreviation__v,abbreviation_2__v,name__v from country__v order by name__v
Parameters	• q (the query, as shown above)
Notes	• **Informational only**, do not necessarily actively use. The CDMS concept of 'Study Country' is a reference / copy of a base Vault country. This VQL gets that master country list. Study Country is more relevant, being countries 'in use' for a study. This query would only be needed if there is a need to detect what other countries are available to the vault, but not activated into a specific study. • The 3-character and 2-character ISO codes are returned

Examples

Description / Request (URL)	Response
Get All Countries (Vault Level)	

…/api/v23.2/query?q=SELECT id,abbreviation__v,abbreviation_2__v,name__v from country__v order by name__v	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"pagesize": 1000,
	"pageoffset": 0,
	"size": 131,
	"total": 131
	},
	"data": [
	{
	"id": "OOV000000000401",
	"abbreviation__v": "AFG",
	"abbreviation_2__v": "AF",
	"name__v": "Afghanistan"
	},
	{
	"id": "OOV000000000402",
	"abbreviation__v": "ALB",
	"abbreviation_2__v": "AL",
	"name__v": "Albania"
	},

Description / Request (URL)	Response

	{
	"id": "OOV000000000403",
	"abbreviation__v": "DZA",
	"abbreviation_2__v": "DZ",
	"name__v": "Algeria"
	},
	{
	"id": "OOV000000000404",
	"abbreviation__v": "ARG",
	"abbreviation_2__v": "AR",
	"name__v": "Argentina"
	}
	:
	:
	(etc)
	:
	]
	}

4.2 Retrieve Study Countries

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-study-countries
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/studycountries
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Used to get the countries of a study. These are activated from the vault's main countries list (previous section) and are then available for selection on a new site.
- The 3-character country code is returned. The 2 character ISO code will be available in a later release of the API. The workaround is to get 2 character country code from the main Vault countries list - see previous section.
- It is not necessary to run this in most sessions as the get of sites / subjects will include study countries

Examples

Description / Request (URL)	Response
Get All Study Countries	
…/api/v23.2/app/cdm/studycountries?study_name=ABCP-2022-01_DEV1	


```
{
    "responseStatus": "SUCCESS",
    "responseDetails": {
        "limit": 1000,
        "offset": 0,
        "size": 3,
        "total": 3
    },
    "study_countries": [
        {
            "study_country": "United States",
            "country": "United States",
            "country_abbreviation": "USA",
            "created_by": "Eric Emerton",
            "created_date": "2022-05-23T17:17:24Z",
            "last_modified_date": "2022-05-23T17:17:24Z"
        },
```

Description / Request (URL)	Response

	{
	"study_country": "Austria",
	"country": "Austria",
	"country_abbreviation": "AUT",
	"created_by": "Eric Emerton",
	"created_date": "2022-05-23T17:22:45Z",
	"last_modified_date": "2022-05-23T17:22:45Z"
	},
	{
	"study_country": "Canada",
	"country": "Canada",
	"country_abbreviation": "CAN",
	"created_by": "Eric Emerton",
	"created_date": "2022-05-23T17:22:53Z",
	"last_modified_date": "2022-05-23T17:22:53Z"
	}
	]
	}

5 Sites

5.1 Retrieve Sites

Reference	https://developer-cdms.veevavault.com/api/23.2/#retrieve-sites
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/sites
Parameters (URL)	

Name	Req/Opt	Notes
study_name	Required	Name of the study
study_country	Optional	Name of the study country, i.e. just the sites of that country
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Used to get the sites of a study.
- Optionally, get the sites only of one country
- Casebook version (i.e. what new subjects added to the site will receive) is returned with other attributes

Examples

Description / Request (URL)	Response
Get All Sites of a Study	
…/api/v23.2/app/cdm/sites?study_name=ABCP-2022-01_DEV1	


```
{
    "responseStatus": "SUCCESS",
    "responseDetails": {
        "limit": 1000,
        "offset": 0,
        "size": 3,
        "total": 3
    },
    "sites": [
        {
            "site": "101",
            "site_name": "Cary Hospital",
            "site_status": "active__v",
            "site_closeout_status": "",
            "study_country": "United States",
            "principal_investigator": "Linda Johnson",
```

Description / Request (URL)	Response

	"casebook_version": 1,
	"timezone": "(GMT-05:00) Eastern Standard Time (America/New_York)"
	},
	{
	"site": "102",
	"site_name": "Raleigh Hospital",
	"site_status": "active__v",
	"site_closeout_status": "",
	"study_country": "United States",
	"principal_investigator": "Mary Peters",
	"casebook_version": 1,
	"timezone": "(GMT-05:00) Eastern Standard Time (America/New_York)"
	},
	{
	"site": "201",
	"site_name": "Montreal General",
	"site_status": "active__v",
	"site_closeout_status": "",
	"study_country": "Canada",
	"principal_investigator": "Jim Jones",
	"casebook_version": 1,
	"timezone": "(GMT-05:00) Eastern Standard Time (America/New_York)"
	}
	]
	}

Get All Sites of a Country	

…/api/v23.2/app/cdm/sites?study_name=ABCP-2022-01_DEV1&study_country=Canada	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"sites": [
	{
	"site": "201",
	"site_name": "Montreal General",
	"site_status": "active__v",
	"site_closeout_status": "",
	"study_country": "Canada",
	"principal_investigator": "Jim Jones",
	"casebook_version": 1,
	"timezone": "(GMT-05:00) Eastern Standard Time

Description / Request (URL)	Response
	(America/New_York)" }] }

6 Subjects / Casebooks

6.1 Retrieve Subjects

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-subjects
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/subjects
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
study_country	Optional	Name of the study country, i.e. just the sites of that country
site	Optional	Name/number of the site, i.e. just subjects of that site
subject	Optional	Name/Number of the specific subject to filter to.
last_modified_date	Optional	Filter to subject's modified since a certain date. Format: yyyy-MM-ddTHH:mm:ssZ
id	Optional	The specific vault ID of the subject, or IDs of several (comma separated) **NOTE:** One can use the ID filter, but with no other filters (site, study_country, last_modified_date).
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Used to get the subjects of a study
- The response returned includes additional dates for milestones for the subject. These **only** appear when there is a date value, omitted from response if not set. Milestone dates are set by either study design configuration, **or** specific set of values by the API (**Set Subject Status**, later section). The Help Main link above details the names of those potential return values.
- See the table below for filtering styles.

Subject Filtering Styles / Examples

Style	Example	Result / Notes
Study Context	`.../subjects?study_name={..}`	All subjects
Study Context	`.../subjects?study_name={..}&study_country=Canada&site=101`	Site 101 subjects
Study Context	`.../subjects?study_name={..}&site=101`	Site 101 subjects (with/without country, same)
Study Context	`../cdm/subjects?study_name={..}&site=101,102`	Site 101 and Site 102 subjects
Study Context	`../cdm/subjects?study_name={..}&site=101,102,501`	Assuming 501 does not exist, Site 101 / 102, same
Study Context	`../cdm/subjects?study_name={..}&site=501,502`	**ERROR** - If neither exists, error return (not empty array), that is, no valid sites
Study Context	`.../subjects?study_name={..}&study_country=Canada&site=101,102`	**ERROR** - Multi site search is not allowed when including a study country, even if both reside at that country
Study Context	`../cdm/subjects?study_name={..}&last_modified_date=2022-07-01T12:00:00Z`	Subjects modified since July 1st, 12:00 UTC
By ID	`../cdm/subjects?study_name={..}&id=OPP00000001V002`	Just the subject with that matching ID, assuming valid Vault ID
By ID	`../cdm/subjects?study_name={..}&id=OPP00000001V002,OPP00000001V003`	The two subjects, assuming both are valid Vault IDs
By ID	`../cdm/subjects?study_name={..}&id=OPP00000001V077,OPP00000001V088`	Assuming neither exists, the return is empty JSON array (not an error), e.g. : subjects [ ] : :

Examples

Description / Request (URL)	Response
Get All Subjects of a Study (includes IXRS ID)	

…/api/v23.2/app/cdm/subjects?study_name=ABCP-2022-01_DEV1	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 12,
	"total": 12
	},
	"subjects": [
	{
	"id": "OPP00000001P001",
	"study_name": "ABCP-2022-01_DEV1",
	"study_country": "United States",
	"site": "101",
	"site_name": "Cary General",
	"subject": "SCR-0009",
	"status": "pre_screen__v",
	"created_date": "2022-06-20T20:28:37Z",
	"created_by": "Eric Emerton",
	"last_modified_date": "2022-06-20T20:28:39Z",
	"casebook_version": 1,
	"ixrs_id": "ABC123-083434",
	"cdms_url": "/ui/#app/page/object-redirect?object_type=subject__v&....(etc)"
	},
	{
	"id": "OPP000000001O001",
	"study_name": "ABCP-2022-01_DEV1",
	"study_country": "United States",
	"site": "101",
	"site_name": "Cary General",
	"subject": "SCR-0008",
	"status": "pre_screen__v",
	"created_date": "2022-06-20T20:14:34Z",
	"created_by": "Eric Emerton",
	"last_modified_date": "2022-06-20T20:14:36Z",
	"casebook_version": 1,
	"ixrs_id": "ABC123-0834445",
	"cdms_url": "/ui/#app/page/object-redirect?object_type=subject__v&....(etc)"
	},
	:
	etc..
	:

Description / Request (URL)	Response
	] }
Get All Subjects of a Country (context filter)	
…/api/v23.2/app/cdm/subjects?study_name=ABCP-2022-01_DEV1&study_country=Canada	(as above.. but to filter of Canada sites only)
Get Subjects of a Site (context filter), where milestone dates are set/present (all shown)	
…/api/v23.2/app/cdm/subjects?study_name=ABCP-2022-01_DEV1&study_country=United States&site=101	: : }, "subjects": [{ "id": "OPP00000001H001", "study_name": "ABCP-2022-01_DEV1", "site": "101", "study_country": "United States", "site_name": "Cary General", "subject": "101-001", "status": "complete__v", "created_date": "2022-06-22T20:53:42Z", "created_by": "Eric Emerton", "initial_consent_date": "2022-06-01", "screened_date": "2022-06-01", "screen_failed_date": "2022-06-02", "enrolled_date": "2022-06-04", "randomized_date": "2022-06-04", "start_treatment_date": "2022-06-21", "end_treatment_date": "2022-06-28", "withdrawn_date": "2022-07-01", "started_follow_up_date": "2022-07-02", "lost_to_follow_up_date": "2022-08-01", "end_study_date": "2022-08-15", "last_modified_date": "2022-09-23T17:18:15Z", "casebook_version": 1, "cdms_url": "/ui/#app/page/object-redirect?object_type=subject__v&....(etc)" }, : :

Description / Request (URL)	Response
Get Subjects of a Site (context filter, with country included)	
…/api/v23.2/app/cdm/subjects?study_name=ABCP-2022-01_DEV1&study_country=United States&site=101	(as above.. but to filter of site 101 only)
Get Subjects of a Site (context filter, no country included, works either way)	
…/api/v23.2/app/cdm/subjects?study_name=ABCP-2022-01_DEV1&site=101	(as above.. but to filter of site 101 only)
Get Subjects of Several Sites (context filter, no country needed)	
…/api/v23.2/app/cdm/subjects?study_name=ABCP-2022-01_DEV1site=101,102	(as above.. but to filter of site 101 and site 102 only)
Get Subjects of Several Sites (context filter, no country needed)	
…/api/v23.2/app/cdm/subjects?study_name=ABCP-2022-01_DEV1site=101,102	(as above.. but to filter of site 101 and site 102 only)
Get Specific Subject (ID style filter)	
…/api/v23.2/app/cdm/subjects?study_name=ABCPharma_DEV1&id=OPP000000000501	(as above.. but the one subject returned only)
Get Two Specific Subjects (ID style filter)	
…/api/v23.2/app/cdm/subjects?study_name=ABCPharm	(as above.. but the two subjects returned only)

Description / Request (URL)	Response
a_DEV1&id=OPP00000000050 1,OPP000000000502	
Get Subjects of Several Sites, WITH country included (**ERROR returned**, multi site search is only with **just** site parameter)	

…/app/cdm/subjects?study
_name=ABCP-2022-
01_DEV1&study_country=Un
ited States&site=101,102
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Search of multiple sites is not allowed when a country is provided"
	}

6.2 Create Subjects (Casebooks)

Help Main	https://developer-cdms.veevavault.com/api/23.2/#create-subjects
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/casebooks
Parameters	

Name	Array/Section	Req/Opt	Notes
study_name		Required	Name of the study
study_country	subjects	Required	Name of the study country (for the new subject/casebook)
site	subjects	Required	Name/number of the site (for the new subject/casebook)
subject	subjects	Optional	The specific subject number to set. When setting, this must be unique study wide. Auto generated numbers - depending on study configuration - can repeat what are pre screening numbers at different sites, but the formal subject number / value must be unique study wide.
ixrs_id	subjects	Optional	String value, the IRT/IXRS value that identifies the subject in that other system (i.e. an integration involved)

Notes

- Used to add a subject/casebook into the study
- For the purposes of add, subject = casebook (synonyms in this context)
- The **subject** parameter is optional. When omitted, the next auto screening number is assigned. Those follow the pattern SCR-0001, SCR-0002, SCR-0003.. within each site, although that is configurable in the target study.
- Multiple subjects/casebooks can be added with one API call. (entry in JSON array per attempt)
- The limit for actions in one request is **100**.
- **WARNING**: Only a study design with subject ID generation of **Manual** or **External** allows the creation of a subject/casebook. Other generation modes involve auto numbering at different times during the subject data progression, and as such, would conflict with the one being set by the API.

Examples

Description / Request (URL)	Response
Add Subject - setting a specific subject number	

{
"study_name": "ABCP-2022-01_DEV1",
"subjects": [
{
"study_country": "United States",
"site": "101",
"subject": "101002"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"subjects": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101002",
	"id": "OPP00000001X001",
	"ixrs_id": "",
	"cdms_url": "/ui/#app/page/object-redirect?.(etc)"
	}
	]
	}

Adding Many Subjects, with IXRS IDs	

{
"study_name": "ABCP-2022-01_DEV1",
"subjects": [
{
"study_country": "United States",
"site": "101",
"subject": "101002",
"ixrs_id": "ABC-12323-4567",
},
{
"study_country": "United States",
"site": "101",
"subject": "101003",
"ixrs_id": "ABC-12323-4569"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"subjects": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101002",
	"id": "OPP00000001X001",
	"ixrs_id": "ABC-12323-4567",
	"cdms_url": "/ui/#app/page/object-redirect?.(etc)"
	},
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101003",
	"id": "OPP00000001X002",
	"ixrs_id": "ABC-12323-4569",
	"cdms_url": "/ui/#app/page/object-redirect?.(etc)"
	}
	]
	}

Add Subject using 'Next' Style Pre Screen Numbering	
{ "study_name": "ABCP-2022-01_DEV1", "subjects": [	{ "responseStatus": "SUCCESS", "subjects": [

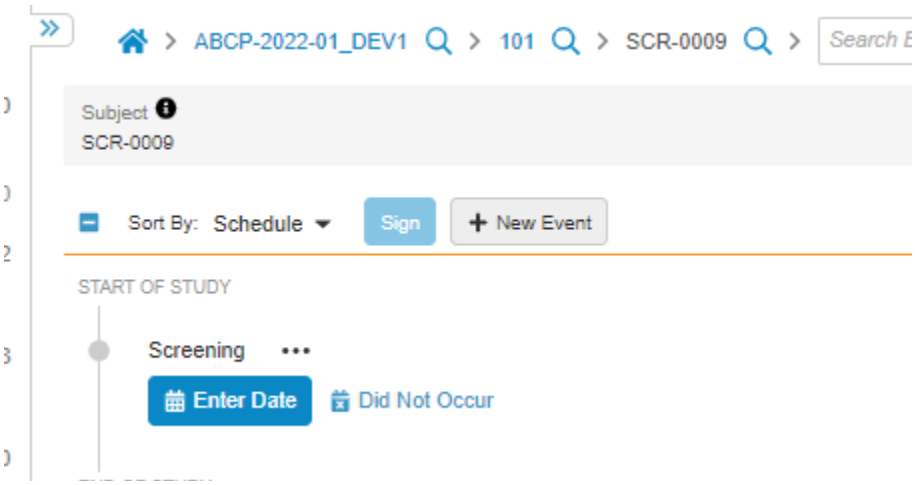
Description / Request (URL)	Response

{
"study_country": "United States",
"site": "101"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0008",
	"id": "OPP00000001X001",
	"ixrs_id": "",
	"cdms_url": "/ui/#app/page/object-redirect?.(etc)"
	}
	]
	}

Add Many Subjects - Some work, some fail	

{
"study_name": "ABCP-2022-01_DEV1",
"subjects": [
{
"study_country": "United States",
"site": "101"
},
{
"study_country": "Germany",
"site": "201"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"subjects": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0012",
	"id": "OPP00000001X001",
	"ixrs_id": "",
	"cdms_url": "/ui/#app/page/object-redirect?.(etc)"
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Study Country] with name [Germany] cannot be found",
	"study_country": "Germany",
	"site": "201"
	}
	]
	}

IMPORTANT: The end result of the add subject/casebook is the same as the UI Create Casebook button/action. The subject is left with only the first event leading, with no date yet. Further actions are performed with additional endpoint calls. (e.g., set event date, then setting of form data, set of subject status)


ABCP-2022-01_DEV1
101
SCR-0009
Subject
SCR-0009
Sort By: Schedule
Sign
New Event
START OF STUDY
Screening
Enter Date
Did Not Occur

6.3 Set Subject Status

Help Main	https://developer-cdms.veevavault.com/api/23.2/#set-subject-status
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/subjects/actions/setstatus
Parameters	

Name	Array/Section	Req/Opt	Notes
study_name		Required	Name of the study
study_country	subjects	Required	Name of the study country (of the subject's site)
site	subjects	Required	Name/number of the site
subject	subjects	Required	Subject to set status
subject_status	subjects	Required	The status to set, using the API name
date	subjects	Required	Date to set for milestone value of that status. Format: yy-MM-dd

Notes

- Used to set the status of a subject
- Often done as a 2nd step, right after adding of a new subject (e.g., advance past Pre-Screening default status to Screening, Enrolled, or other)
- That **subject_status** value must be the **API name**, not the label (e.g. **enrolled__v**, including the Veeva suffix). See the table below for out of the box statuses, although there can be additional statuses in the vault (custom)
- The set of a milestone date, i.e., the date the subject took on that status is required. 'Now' is not specifically used, as this might/could be a date in the past being set. This is the equivalent of a studio design rule, which when some condition is true from submit of form data, a date is set + status changed for the subject.
- Refer to the table below / next page for order of precedence of subject statuses, when setting or unset.
- A future release of the API will decouple these concepts, so the move of status and/or the set of milestone dates can be done separately, i.e. not using milestone dates, or correcting status dates without having to unset / redo status calls.
- **WARNING:** Currently, the set of multiple subjects, or multiple statuses for one subject (in one API call) is not allowed. The format of request is still with the format of a subjects array, for future state of this endpoint.

Status Order / Precedence

Subject statuses follow an order of precedence, with general rule of thumb that to rollback a status, one must call the **Unset Subject Status** (next section) in reverse order of the precedence:

Order	Subject Status	API Value to Set	Field Return in Retrieve Subjects
1	Pre Screen	pre_screen__v	*N/A, not a milestone date*
2	Consented	consented__v	initial_consent_date
3	In Screening	in_screening__v	screened_date
4	Screen Failure	screen_failure__v	screen_failed_date
5	Enrolled	enrolled__v	enrolled_date
6	Randomized	randomized__v	randomized_date
7	Started Treatment	started_treatment__v	started_treatment_date
8	End Of Treatment	end_of_treatment__v	end_of_treatment_date
9	Withdrawn	withdrawn__v	withdrawn_date
10	Started Follow Up	started_follow_up__v	started_follow_up_date
11	Lost to Follow Up	lost_to_follow_up__v	lost_to_follow_up_date
12	Complete	complete__v	end_of_study_date

Examples

Description / Request (URL)	Response
Set Enrolled Status to Subject	

{
"study_name": "ABCP-2022-01_DEV1",
"subjects": [
{
"study_country": "United States",
"site": "101",
"subject": "101001",
"subject_status": "enrolled__v",
"date": "2022-01-15"
}
]
}
	{
	"responseStatus": "ABCP-2022-01_DEV1",
	"subjects": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101001",
	"subject_status": "enrolled__v"
	}
	]
	}

Attempt that fails	

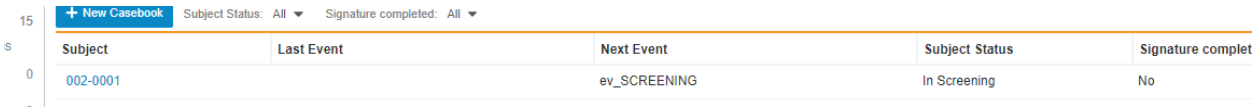
{
"study_name": "ABCP-2022-01_DEV1",
"subjects": [
{
"study_country": "United Statess",
"site": "101",
"subject": "101002",
"subject_status": "enrolled__v",
"date": "2022-01-16"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"subjects": [
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Study Country] with name [United Statess] not found",
	"site": "101",
	"study_country": "United Statess",
	"subject": "101002",
	"subject_status": "enrolled__v"
	}
	]
	}

Failing Attempt (Batch)	

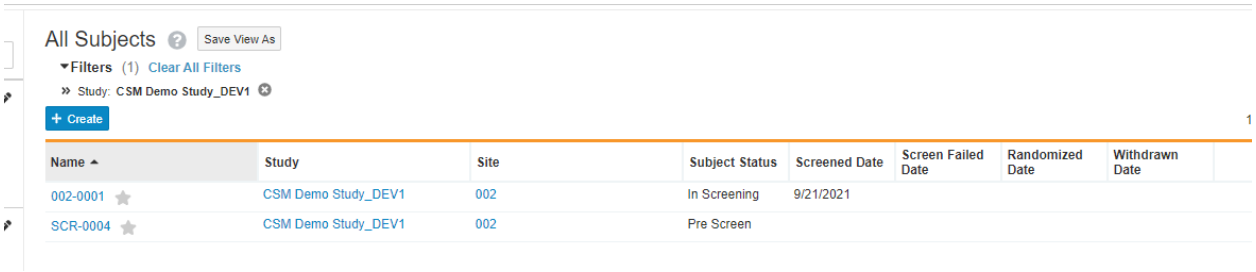
{
"study_name": "ABCP-2022-01_DEV1",
"subjects": [
{
"study_country": "United States",
"site": "101",
"subject": "101002",
"subject_status": "in_screening__v",
"date": "2022-01-15"
},
{
"study_country": "United States",
	{
	"responseStatus": "FAILURE",
	"errors": [
	{
	"type": "SDK_ERROR",
	"subtype": "INVALID_DATA",
	"message": "Status can only be set for one subject at a time"
	}
	]
	}

Description / Request (URL)	Response
"site": "101", "subject": "101003", "subject_status": "enrolled__v", "date": "2022-01-16" }] }	

Once set, example of status in the EDC UI:



Milestone dates set are not present in the main entry UI, but available in reports / exports:



6.4 Unset Subject Status

Help Main	https://developer-cdms.veevavault.com/api/23.2/#unset-subject-status
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/subjects/actions/unsetstatus
Parameters	

Name	Array/Section	Req/Opt	Notes
study_name		Required	Name of the study
study_country	subjects	Required	Name of the study country (of the subject's site)
site	subjects	Required	Name/number of the site
subject	subjects	Required	Subject to unset status
subject_status	subjects	Required	The status to unset, using the API name

Notes

- Used to **unset** the status of a subject
- See the table of statuses in the previous section for precedence / order. There can be also be additional statuses in the vault (custom)
- The unset of the subject status will also rollback /remove the milestone date previously set. There is order of precedence so if a subject has moved In Screening -> Enrolled -> Randomized, and an unset of Enrolled takes place, **BOTH** the enrolled and randomized dates are **removed**. See the previous section for an order of precedence of subject statuses
- **WARNING:** Currently, the unset of multiple subjects, or multiple for one subject (in one API call) is not allowed. The format of request is still with format of a subjects array, for future state

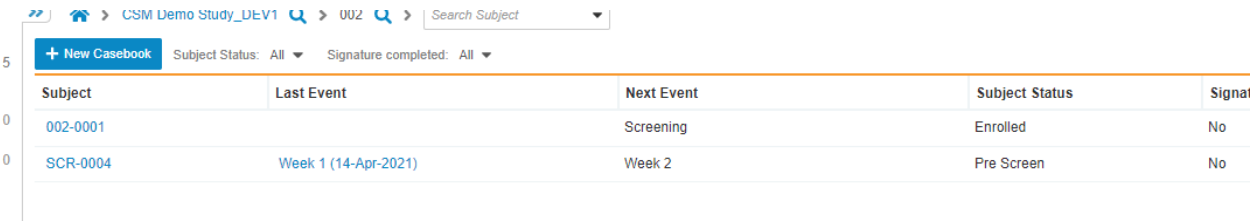
Examples

Description / Request (URL)	Response
Unset Enrolled Status	

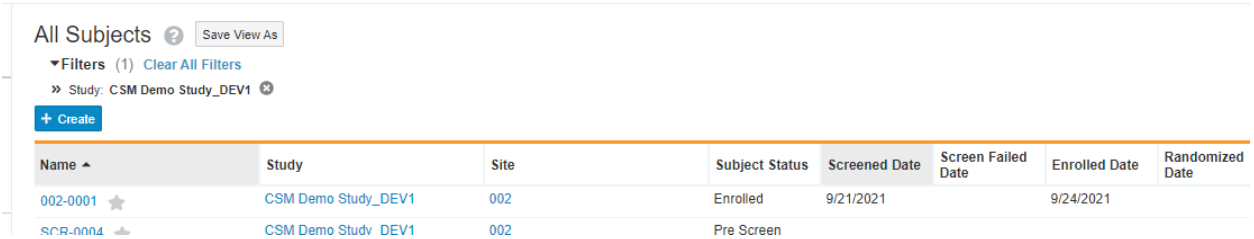
{
"study_name": "ABCP-2022-01_DEV1",
"subjects": [
{
"study_country": "United States",
"site": "101",
"subject": "101001",
"subject_status": "enrolled__v"
}
]
}
	{
	"responseStatus": "ABCP-2022-01_DEV1",
	"subjects": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101001",
	"subject_status": "enrolled__v"
	}
	]
	}

Flow Based Example

For a UI based cause effect, starting with a subject at Enrolled:



.. and with milestone of Sept 24th for Enrolled:



Example / Return: (success, removes the milestone date as part of status rollback):

EDC Services / **Set Unset Subject Status**

POST https://edc-services-internal.veevavault.com/api/v21.2/app/cdm/subjects/actions/unsetstatus

Params Authorization Headers (12) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1  {
2      "study_name": "CSM Demo Study_DEV1",
3      "subjects": [
4          {
5              "site": "002",
6              "study_country": "United States",
7              "subject": "002-0001",
8              "subject_status": "enrolled__v"
9          }
10     ]
11 }
```

Body Cookies Headers (16) Test Results Status: 200 OK

Pretty Raw Preview Visualize JSON

```
1  {
2      "responseStatus": "SUCCESS",
3      "subjects": [
4          {
5              "responseStatus": "SUCCESS",
6              "site": "002",
7              "study_country": "United States",
8              "subject": "002-0001",
9              "subject_status": "enrolled__v"
10         }
11     ]
```

Result In EDC UI: (status listing, enrolled date is removed, then main subject list, back to **In Screening** status)

All Subjects Save View As

Filters (1) Clear All Filters

» Study: CSM Demo Study_DEV1

+ Create

Name	Study	Site	Subject Status	Screened Date	Screen Failed Date	Enrolled Date	Randomized Date	With Date
002-0001	CSM Demo Study_DEV1	002	In Screening	9/21/2021				
SCR-0004	CSM Demo Study_DEV1	002	Pre Screen					

+ New Casebook Subject Status: All Signature completed: All

Subject	Last Event	Next Event	Subject Status
002-0001		Screening	In Screening
SCR-0004	Week 1 (14-Apr-2021)	Week 2	Pre Screen

7 Event Groups

7.1 Create Event Groups

Help Main	https://developer-cdms.veevavault.com/api/23.2/#create-event-groups
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/eventgroups
Parameters	

Name	Array/Section	Req/Opt	Notes
study_name		Required	Name of the study
study_country	eventgroups	Required	Name of the study country (of the subject's site)
site	eventgroups	Required	Name/number of the site
subject	eventgroups	Required	Subject to act on
eventgroup_name	eventgroups	Required	Design **name** in the study of the event group to add/upsert
date	eventgroups	Optional*	Only applicable to **Unscheduled** type event groups. Format: yyyy-MM-dd The date will be marked as externally owned as part of the action.

Notes

- Used to add an Event Group
- The limit for actions in one request is **100**.
- This action will add the **'next'** event group, in sequence if the event group repeats. Example: Unscheduled event group currently has 2 existing, the action would add one with event group **sequence** = 3.
- Use the upsert (PUT), next section, for conditional add at a specific sequence. Example: 3 unscheduled event groups exist, and attempt to add sequence = 3 is essentially a skip. (i.e. 'add if not there, otherwise do nothing).
- For the **Unscheduled** type event group, the API call **must** include an event date (format: **yyyy-MM-dd**). For other event group types, the date is not set in this API call, instead the Set Event Date (see the **Set Event Date** section)
- At **23R1**, the addition of an **Unscheduled** type event group sets the date with externally owned property. On retrieval of the events, and return from successful use, **externally_owned_date = true**.

Examples

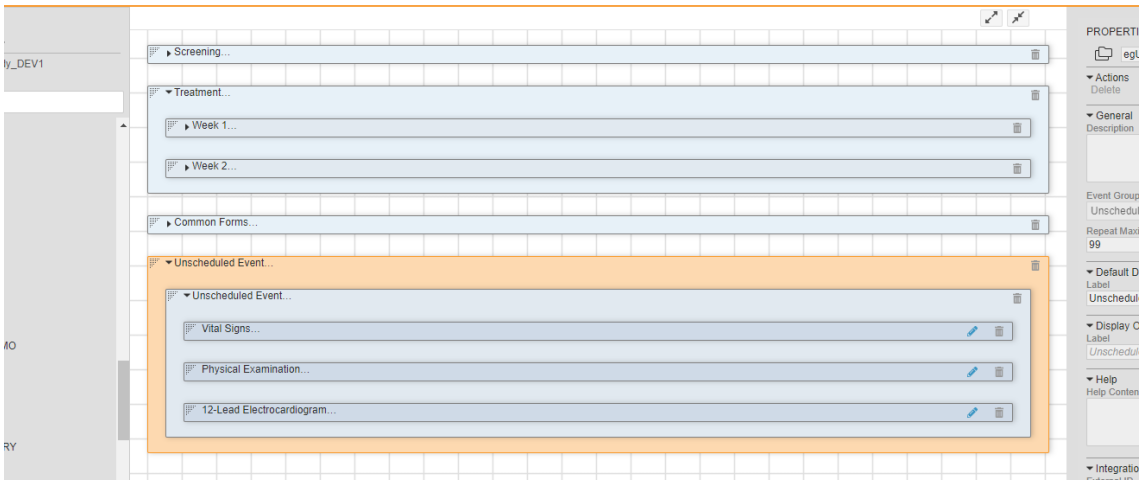
Description / Request (URL)	Response
Add New Event Groups (multiple subjects in one call)	
{ "study_name": "ABCP-2022-01_DEV1",	{ "responseStatus": "SUCCESS",

Description / Request (URL)	Response

"eventgroups": [
{
"study_country": "United States",
"site": "101",
"subject": "101-001",
"eventgroup_name": "egSCREENING"
},
{
"study_country": "United States",
"site": "101",
"subject": "101-002",
"eventgroup_name": "egIRT_INFO"
}
]
}
	"eventgroups": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egSCREENING",
	"eventgroup_sequence": 1
	},
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egIRT_INFO",
	"eventgroup_sequence": 1
	}
	]
	}

Flow Based Example

For the study design: (event groups are eg_SCREENING, eg_TREATMENT, eg_COMMONFORMS, eg_UNS, in design name):



The event group (highlighted above) is of Type = **Unscheduled** and has name **egUNS**. The POST (add) example returns the newly added event group sequence since it repeats:

POST https://edc-services-internal.veevavault.com/api/v21.2/app/cdm/eventgroups

Params Authorization Headers (12) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

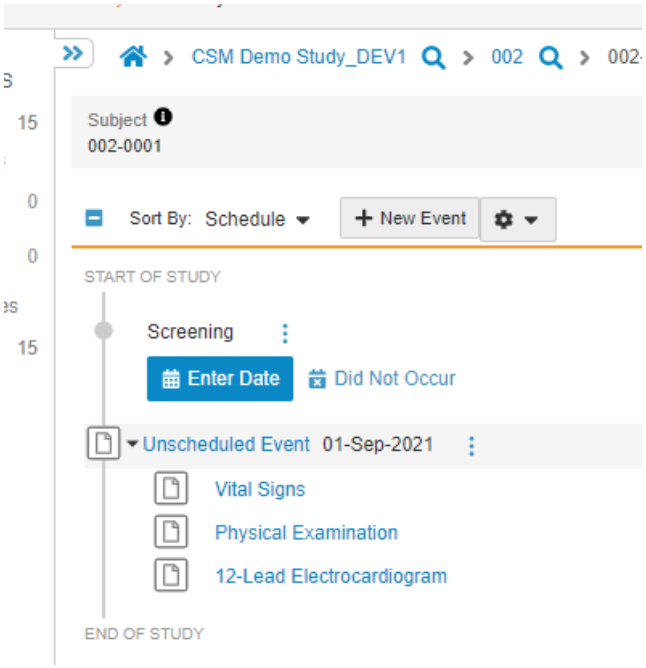
```
{
    "study_name": "CSM Demo Study_DEV1",
    "eventgroups": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "egUNS",
            "date": "2021-09-01"
        }
```

Body Cookies Headers (16) Test Results Stat

Pretty Raw Preview Visualize JSON

```
{
    "responseStatus": "SUCCESS",
    "eventgroups": [
        {
            "responseStatus": "SUCCESS",
            "site": "002",
            "study_country": "United States",
            "subject": "002-0001",
            "eventgroup_name": "egUNS",
            "eventgroup_sequence": 1
        }
    ]
```

Result in EDC:



WARNING: The blind call of this endpoint will continue to add more event groups if it repeats, e.g.:

EDC Services / **Add Event Group**

POST https://edc-services-internal.veevavault.com/api/v21.2/app/cdm/eventgroups

Params Authorization Headers (12) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

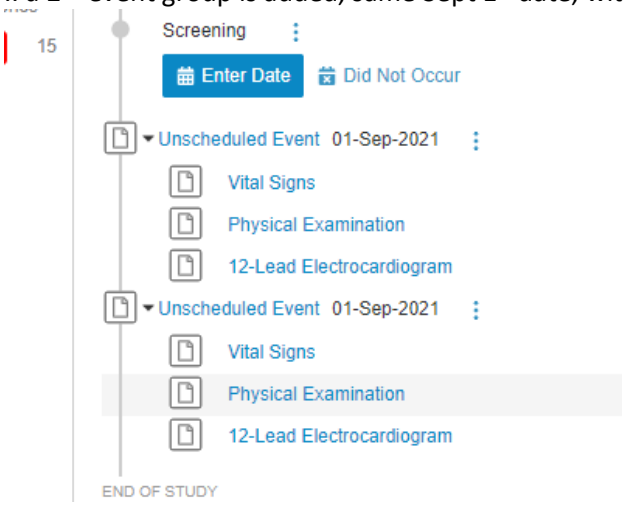
```
1  {
2      "study_name": "CSM Demo Study_DEV1",
3      "eventgroups": [
4          {
5              "study_country": "United States",
6              "site": "002",
7              "subject": "002-0001",
8              "eventgroup_name": "egUNS",
9              "date": "2021-09-01"
10         }
```

Body Cookies Headers (16) Test Results Status: 200 OK Tim

Pretty Raw Preview Visualize JSON

```
1  {
2      "responseStatus": "SUCCESS",
3      "eventgroups": [
4          {
5              "responseStatus": "SUCCESS",
6              "site": "002",
7              "study_country": "United States",
8              "subject": "002-0001",
9              "eventgroup_name": "egUNS",
10             "eventgroup_sequence": 2
11         }
12     ]
```

.. a 2nd event group is added, same Sept 1st date, with Event Group Sequence 2 (Not pictured in the UI):



TIP: Good practice is to inspect the existing forms / events before attempting the action. Or use the Upsert (**PUT**) for a very specific sequence of the event group, see the next section.

7.2 Upsert Event Groups

Help Main	https://developer-cdms.veevavault.com/api/23.2/#upsert-event-groups
Style	**PUT**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/eventgroups
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	eventgroups	Required	Name of the study country (of the subject's site)
site	eventgroups	Required	Name/number of the site
subject	eventgroups	Required	Subject to act on
eventgroup_name	eventgroups	Required	Design **name** in the study of the event group to add/upsert
eventgroup_sequence	eventgroups	Required	
date	eventgroups	Optional*	Only applicable to **Unscheduled** type event groups. Format: yyyy-MM-dd The date will be marked as externally owned as part of the action.

Notes

- Used to add (if doesn't exist yet at that specific sequence), or skip if exists
- The limit for actions in one request is **100**.
- For an **Unscheduled** type event group, the API call **must** include an event date (format: **yyyy-MM-dd**) for the event inside the group. All other event group types, the date is not set in this API call, instead using **Set Event Date** (next section)
- **WARNING:** The sequences of event groups should be added in order. Leaving a 'hole' (e.g. Event Group Sequence = 2, where Event Group Sequence = 1 entry does not exist) should not be attempted, and will be enforced as an error.
- At **23R1**, the addition of an **Unscheduled** type event group sets the date with externally owned property. On retrieval of the events, and return from successful use, **externally_owned_date = true**.

Examples

Description / Request (URL)	Response
Multiple upserts at the same time	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "eventgroups": [
        {
            "study_country": "United States",
            "site": "101",
            "subject": "101-001",
            "eventgroup_name": "egSCREENING",
```

```
{
    "responseStatus": "SUCCESS",
    "eventgroups": [
        {
            "responseStatus": "SUCCESS:CREATED",
            "study_country": "United States",
            "site": "101",
            "subject": "101-001",
```

Description / Request (URL)	Response

"eventgroup_sequence": 1
},
{
"study_country": "United States",
"site": "101",
"subject": "101-002",
"eventgroup_name": "egMAIN_VISITS",
"eventgroup_sequence": 1
}
]
}
	"eventgroup_name": "egSCREENING",
	"eventgroup_sequence": 1
	},
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "101-002",
	"eventgroup_name": "egMAIN_VISITS",
	"eventgroup_sequence": 1
	}
	]
	}

New unscheduled type event group, added	

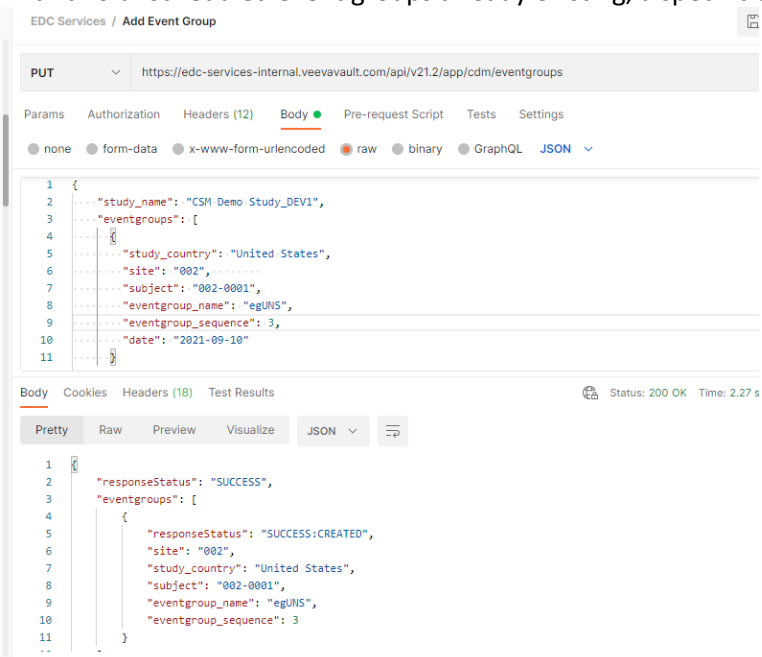
{
"study_name": "ABCP-2022-01_DEV1",
"eventgroups": [
{
"study_country": "United States",
"site": "101",
"subject": "101-001",
"eventgroup_name": "egUNSCHEDULED",
"eventgroup_sequence": 2,
"date": "2022-04-01"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"eventgroups": [
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egUNSCHEDULED",
	"eventgroup_sequence": 2,
	"date": "2022-04-01",
	"externally_owned_date": true
	}
	]

Add of two, first exists (skipped), 2nd added	
{ "study_name": "ABCP-2022-01_DEV1", "eventgroups": [{ "study_country": "United States", "site": "101", "subject": "101-001", "eventgroup_name": "egUNSCHEDULED", "eventgroup_sequence": 1, "date": "2022-04-01" }, { "study_country": "United States", "site": "101", "subject": "101-001", "eventgroup_name": "egUNSCHEDULED", "eventgroup_sequence": 2,	{ "responseStatus": "SUCCESS", "eventgroups": [{ "responseStatus": "SUCCESS:UPDATED", "study_country": "United States", "site": "101", "subject": "101-001", "eventgroup_name": "egUNSCHEDULED", "eventgroup_sequence": 1, "date": "2022-04-01", "externally_owned_date": true }, { "responseStatus": "SUCCESS:CREATED", "study_country": "United States", "site": "101",

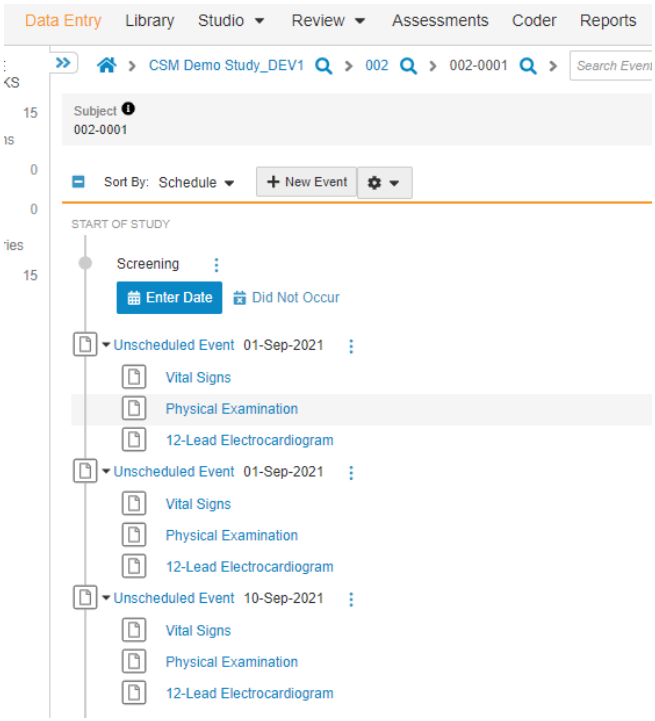
Description / Request (URL)	Response
"date": "2022-05-01" }] }	"subject": "101-001", "eventgroup_name": "egUNSCHEDULED", "eventgroup_sequence": 2, "date": "2022-05-01", "externally_owned_date": true }] }

Flow Based Examples

With two unscheduled event groups already existing, a specific target of adding the 3rd unscheduled event:

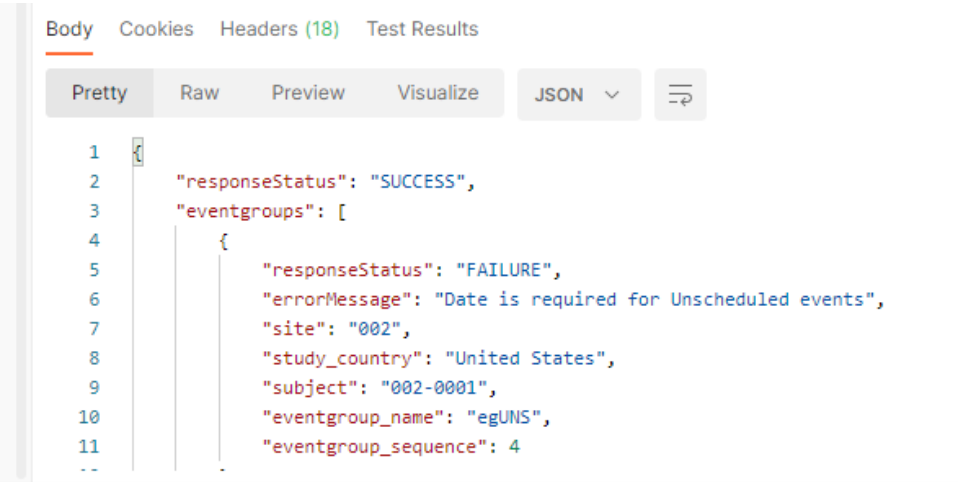


...yields, in EDC:



WARNING: The **Upsert** of an event group is **not** used to update an existing event group, its first event's date. To update the event date, use / see the **Set Event Date** API (next section). The use of upsert, when the event group already exists, is merely a 'skip, do nothing' safe call. That is, create/add if not there, otherwise, no changes. This becomes a safer way to add specific event groups, as **Create Event Group** is always a brand new event group, next in sequence.

The event date is required for an event group of type = **Unscheduled**, with failed attempt:



Contrast this to the add of a scheduled event group that only integration (e.g. IRT system) should control / add. For the example study, the **Common Forms** is just such an event group of events/forms. The add is successful:

POST https://edc-services-internal.veevavault.com/api/v21.2/app/cdm/eventgroups

Params Authorization Headers (12) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

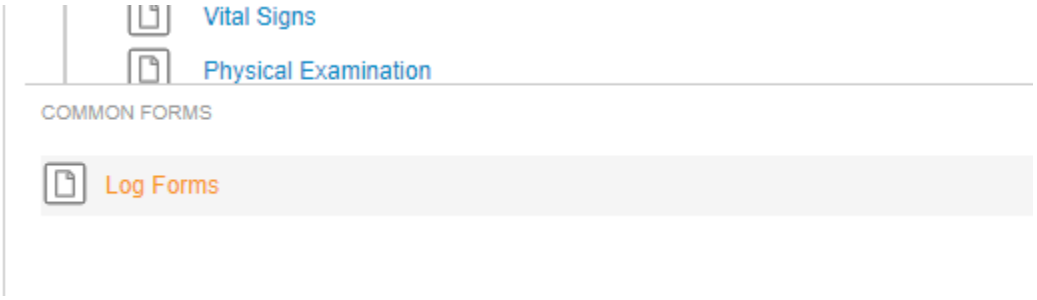
```
{
    "study_name": "CSM Demo Study_DEV1",
    "eventgroups": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_COMMONFORMS"
        }
    ]
}
```

Body Cookies Headers (16) Test Results Status: 200 OK Time: 1308 ms

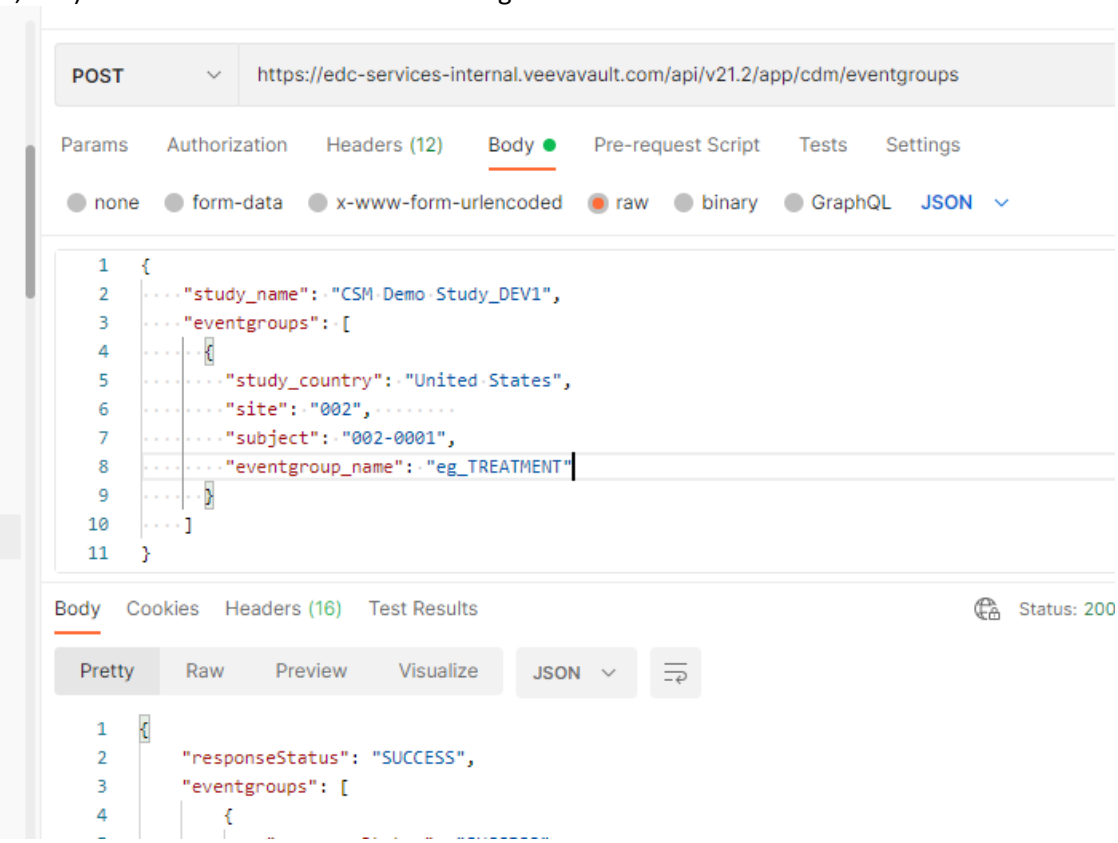
Pretty Raw Preview Visualize JSON

```
{
    "responseStatus": "SUCCESS",
    "eventgroups": [
        {
            "responseStatus": "SUCCESS",
            "site": "002",
            "study_country": "United States",
            "subject": "002-0001",
            "eventgroup_name": "eg_COMMONFORMS",
            "eventgroup_sequence": 1
        }
```

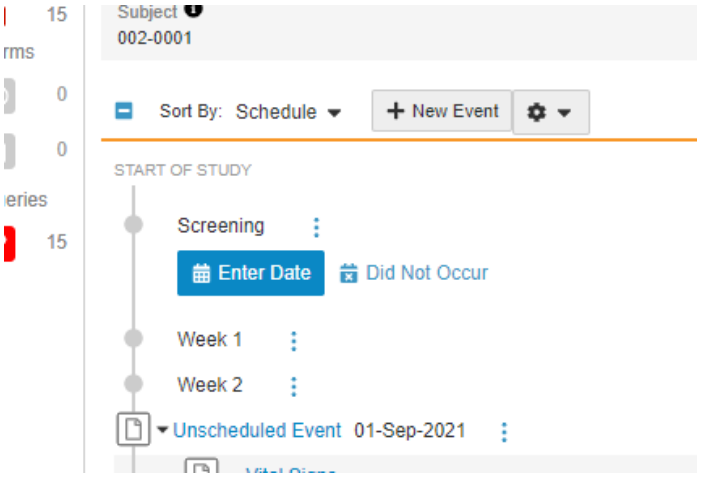
With result an EDC event group with no date set, but awaiting entry into the forms of it:



Lastly, there are occasions to have an API call add an event group, scheduled (like a Common / Logs area) but that will require a date. In the example study the eg_TREATMENT is the main event group of the study (Events Week 1, Week 2, etc.). The add of it can be done through API:



But, the date is not set – i.e., for the first event of the event group (like unscheduled types are). To set that, one must follow on with a [Set Event Date]() API call (next section)



8 Events

8.1 Retrieve Events / Forms

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-events
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/events
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
study_country	Required	Name of the study country (of the subject's site)
site	Required	Name/number of the site
subject	Required	Subject to act on
eventgroup_name	Optional	Design **name** in the study of the event group to filter to
eventgroup_sequence	Optional	The specific sequence of an event group
event_name	Optional	Design **name** in the study of the event to filter to
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes	• Use this API to retrieve existing events / forms (of the events) for at most, one subject • The largest scope of the retrieval is one subject

Examples

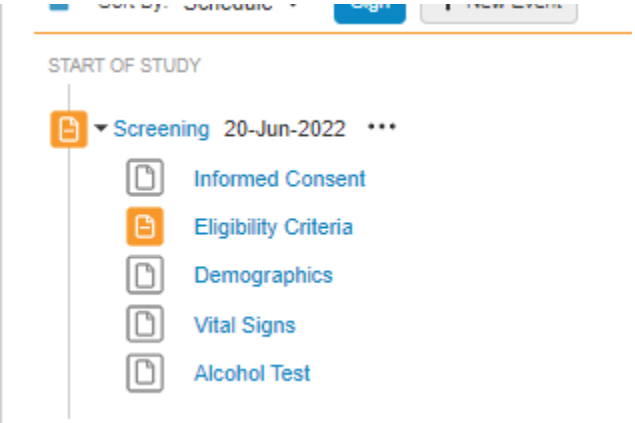
Description / Request (URL)	Response
Get of specific event (1)	

../app/cdm/events?study_name=ABCP-2022-01_DEV1&study_country=United States&site=101&subject=SCR-0001&eventgroup_name=egSCR&eventgroup_sequence=1&event_name=evSCR	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"events": [
	{
	"id": "OPS00000001M006",

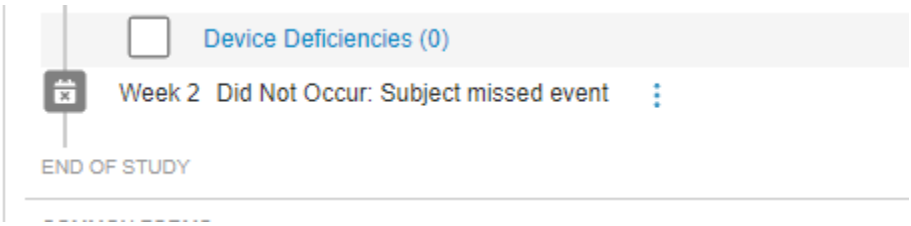
Description / Request (URL)	Response
	"study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egSCR", "eventgroup_sequence": 1, "event_name": "evSCR", "event_sequence": 1, "locked": false, "frozen": false, "externally_owned_date": true, "frozen": false, "event_did_not_occur": false, "forms": [{ "id": "OPT00000001M002", "form_name": "Informed-Consent", "form_sequence": 1, "form_status": "blank__v", "locked": true, "frozen": true, "intentionally_left_blank": false }, { "id": "OPT00000001M003", "form_name": "Eligibility-Criteria", "form_sequence": 1, "form_status": "submitted__v", "locked": false, "frozen": true, "intentionally_left_blank": false }, { "id": "OPT00000001M003", "form_name": "Demographics", "form_sequence": 1, "form_status": "blank__v", "locked": false, "frozen": true, "intentionally_left_blank": false }, { "id": "OPT00000001M004", "form_name": "Vital-Signs", "form_sequence": 1, "form_status": "blank__v", "locked": false, "frozen": true, "intentionally_left_blank": false

Description / Request (URL)	Response
	}, { "id": "OPT00000001M005", "form_name": "PK", "form_sequence": 1, "form_status": "__v", "locked": false, "frozen": true, "intentionally_left_blank": true, "intentionally_left_blank_reason": "Form not done" }] }] }
Get of an event that is in planned or did not occur status (no forms yet)	
.../app/cdm/events?study_name=ABCP-2022-01_DEV1&study_country=United States&site=101&subject=SCR-0001&eventgroup_name=egMAIN	{ "responseStatus": "SUCCESS", "responseDetails": { "limit": 1000, "offset": 0, "size": 1, "total": 1 }, "events": [{ "study_country": "United States", "site": "102", "subject": "SCR-0001", "eventgroup_name": "egMAIN", "eventgroup_sequence": 1, "event_name": "evVISIT1", "event_sequence": 1, "locked": false, "frozen": false, "event_date": null, "externally_owned_date": false, "event_did_not_occur": true, "event_did_not_occur_reason": "Early termination of subject", "forms": [] }] }

The event date originates from the level above all forms of that event (June 20th, 2022 for example):



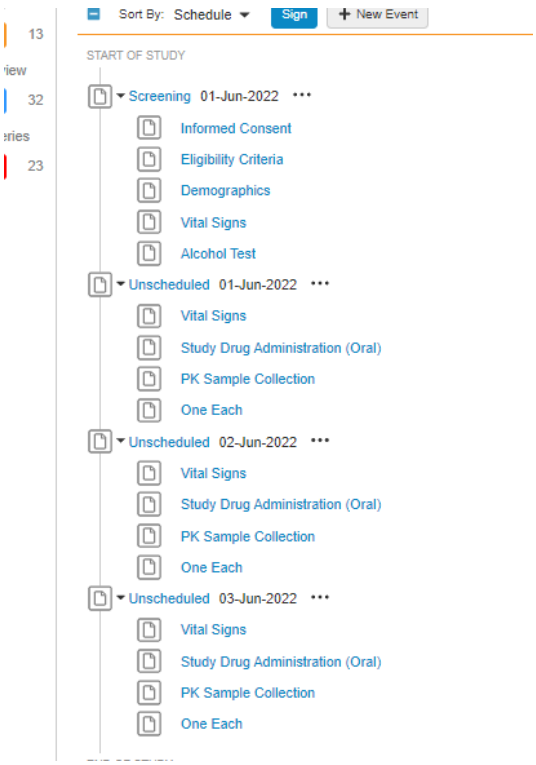
The **Example 2** above includes no forms returned. This can happen when the event status is Planned (no event date yet), or Did Not Occur (specifically marked by site as missed or other reason)



Form Statuses

Label	API Return	When / Notes
Blank	blank__v	The form is not yet visited (no data points / items), or is visited but all fields are their initial blank status. The form can also take on this status after a reset action
In Progress	in_progress__v	At least one data point (item) has its first value in the form
Submitted	submitted__v	The form is in submitted/completed state. No updates (UI or API) can occur until the form is opened for edit **NOTE**: A form can be in submitted status, and be additionally marked Intentionally Left Blank. (i.e. reasons for not having the data)
In Progress Post Submit	in_progress_post_submit__v	Like submitted, but the form has been submitted (then reopened) at least once.

Consider repeating event groups / events, the eventgroup_sequence is key for identification, as well as the event date. Below 3 events – Unscheduled – repeat:



.. with applicable section in the return, noting **eventgroup_sequence: 3** : (June 3rd, 2022)

Pretty Raw Preview Visualize JSON


```
109        },
110        {
111            "study_country": "United States",
112            "site": "101",
113            "subject": "SCR-0005",
114            "eventgroup_name": "egUNS",
115            "eventgroup_sequence": 3,
116            "event_name": "evUNS",
117            "event_sequence": 1,
118            "locked": false,
119            "frozen": false,
120            "event_date": "2022-06-03",
121            "forms": [
122                {
123                    "form_name": "VS",
124                    "form_sequence": 1,
125                    "form_status": "blank__v",
126                    "locked": false,
127                    "frozen": false,
128                    "intentionally_left_blank": false,
129                    "intentionally_left_blank_reason": null
130                },
131                {
132                    "form_name": "EX",
```

8.2 Create Events

Help Main	https://developer-cdms.veevavault.com/api/23.2/#create-events
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/events
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	events	Required	Name of the study country (of the subject's site)
site	events	Required	Name/number of the site
subject	events	Required	Subject to act on
eventgroup_name	events	Required	Design **name** in the study of the event group where the event resides
eventgroup_sequence	events	Optional	The specific sequence of an event group, **1** if omitted
event_name	events	Required	Design **name** in the study of the event to add

Notes

- **Only** used for the addition of an event to an existing event group. It does not also add a non-existent event group. See Add/Upsert Event Group sections for event groups
- The limit for actions in one request is **100**.
- Does not set the event date, instead one would use **Set Event Date** (next section)
- The endpoint is used for a dynamic (or 'integration only') event.
- **TIP:** Although the example above is from a non-repeating event group, and **eventgroup_sequence** is not strictly required, it is good practice to always include this value. Repeating event groups, later forms will need specific values.

Examples

Description / Request (URL)	Response
Non-repeating event group where event resides	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "events": [
        {
            "study_country": "United States",
            "site": "101",
            "subject": "101-001",
            "eventgroup_name": "egTREATMENT",
            "event_name": "evV6"
        }
    ]
}
```

```
{
    "responseStatus": "SUCCESS",
    "events": [
        {
            "responseStatus": "SUCCESS",
            "study_country": "United States",
            "site": "101",
            "subject": "101-001",
            "eventgroup_name": "egTREATMENT",
            "eventgroup_sequence": 1,
            "event_name": "evV6",
            "event_sequence": 1
        }
    ]
```

Description / Request (URL)	Response
	}
Add of event inside a repeating event group, the 2nd sequence	

{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "United States",
"site": "101",
"subject": "101-001",
"eventgroup_name": "egCYCLE",
"eventgroup_sequence": 2,
"event_name": "evDYNAMIC_ASSESS"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egCYCLE",
	"eventgroup_sequence": 2,
	"event_name": "evDYNAMIC_ASSESS",
	"event_sequence": 1
	}
	]
	}

Multiple attempted, one fails due to already existed	

{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "United States",
"site": "201",
"subject": "201-001",
"eventgroup_name": "egCYCLE",
"eventgroup_sequence": 2,
"event_name": "evDYNAMIC_ASSESS"
},
{
"study_country": "United States",
"site": "201",
"subject": "201-002",
"eventgroup_name": "egCYCLE",
"eventgroup_sequence": 2,
"event_name": "evDYNAMIC_ASSESS"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Cannot create event because it already exists",
	"study_country": "Canada",
	"site": "201",
	"subject": "201-001",
	"eventgroup_name": "Days-6-14",
	"eventgroup_sequence": 2,
	"event_name": "evDYNAMIC_ASSESS"
	},
	{
	"responseStatus": "SUCCESS",
	"study_country": "Canada",
	"site": "201",
	"subject": "201-002",
	"eventgroup_name": "Days-6-14",
	"eventgroup_sequence": 2,
	"event_name": "evDYNAMIC_ASSESS",
	"event_sequence": 1
	}
	]
	}

8.3 Set Event Date

Help Main	https://developer-cdms.veevavault.com/api/23.2/#set-event-date
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/events/actions/setdate
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	events	Required	Name of the study country (of the subject's site)
site	events	Required	Name/number of the site
subject	events	Required	Subject to act on
eventgroup_name	events	Required	Design **name** in the study of the event group where the event resides
eventgroup_sequence	events	Optional	The specific sequence of an event group, **1** if omitted
event_name	events	Required	Design **name** in the study of the event
date	events	Required	The date to set, yyyy-MM-dd format
change_reason	events	Depends	The reason for date change. Only **required** when the event already has an event date set
allow_planned_override	events	Optional	Default is false. When passing true, a date can be set that is out of the planned window. If false, such a date is returned as an error
externally_owned_date	events	Optional	Default is **true**. When true, the date cannot be edited by the end user. If a mistake is made in setting a date through the API, and re-enable for the end user is necessary, call the endpoint with a **false**.

Notes

- Used to **set** an event date to an **existing** event. (does **not** add the event or event group the event resides, that is done in other API calls first)
- The limit for actions in one request is **100**.
- Date format is **yyyy-MM-dd**
- The endpoint call (as **POST**) is used for both setting a date when none exists, plus updating an event that has an existing date value. (**PUT** is not used for update)
- **TIP:** Although the example above is from a non-repeating event group, and **eventgroup_sequence** is not strictly required, it is good practice to always include this value. Repeating event groups, later forms will need specific values.

Examples

Description / Request (URL)	Response
Non-repeating event group (where event resides)	

{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "United States",
"site": "101",
"subject": "101-001",
"eventgroup_name": "egTREATMENT",
"event_name": "evV6" ,
"date": "2022-06-01"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPS00000001M006",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egTREATMENT",
	"eventgroup_sequence": 1,
	"event_name": "evV6",
	"event_sequence": 1,
	"date": "2022-06-01",
	"externally_owned_date": true,
	"allowplanneddate_override": false,
	}
	]
	}

Two attempted, one succeeds, one fails	

{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "Canada",
"site": "201",
"subject": "201-001",
"eventgroup_name": "egTREATMENT",
"event_name": "evDay1" ,
"date": "2022-06-01"
},
{
"study_country": "Canada",
"site": "201",
"subject": "201-005",
"eventgroup_name": "egTREATMENT",
"event_name": "evDay1" ,
"date": "2022-06-05"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPS00000001M006",
	"study_country": "Canada",
	"site": "201",
	"subject": "201-001",
	"eventgroup_name": "egTREATMENT",
	"eventgroup_sequence": 1,
	"event_name": "evDay1",
	"event_sequence": 1,
	"date": "2022-06-01",
	"externally_owned_date": true,
	"allowplanneddate_override": false
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Subject] with name [201-005] not found",
	"study_country": "Canada",
	"site": "201",

Description / Request (URL)	Response
	"subject": "201-005", "eventgroup_name": "egTREATMENT", "eventgroup_sequence": 1, "event_name": "evDay1", "event_sequence": 1, "date": "2022-06-05" }] }
Setting a specific sequence for repeating event group (events within)	

{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "United States",
"site": "101",
"subject": "101-001",
"eventgroup_name": "egCYCLE",
"eventgroup_sequence": 2,
"event_name": "evDYNAMIC_ASSESS",
"date": "2022-06-01"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPS00000001M006",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egCYCLE",
	"eventgroup_sequence": 2,
	"event_name": "evDYNAMIC_ASSESS",
	"event_sequence": 1,
	"date": "2022-06-01",
	"externally_owned_date": true,
	"allowplanneddate_override": false
	}
	]
	}

Override where the event date would otherwise be out of window	

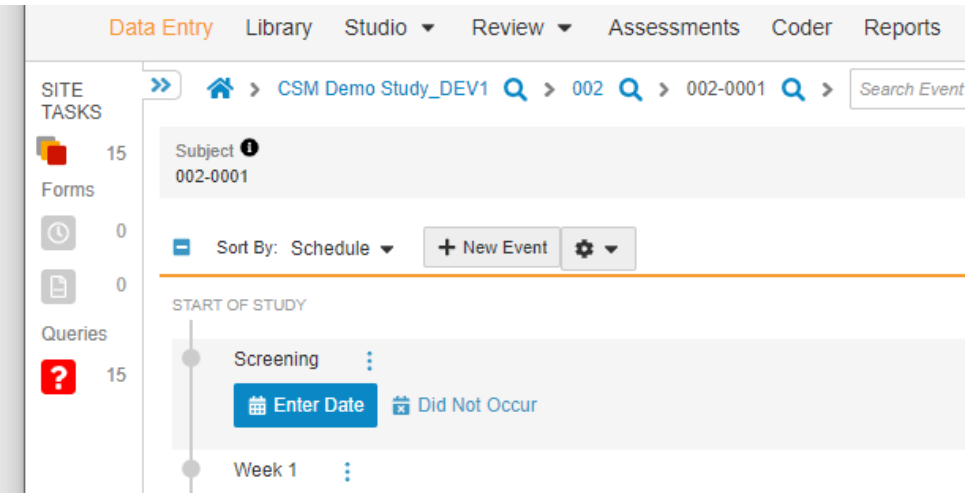
{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "United States",
"site": "101",
"subject": "101-001",
"eventgroup_name": "egTREATMENT",
"event_name": "evV6" ,
"date": "2022-06-01",
"allow_planneddate_override": true
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPS00000001M006",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egTREATMENT",
	"eventgroup_sequence": 1,
	"event_name": "evV6",
	"event_sequence": 1,
	"date": "2022-06-01",
	"externally_owned_date": true,

Description / Request (URL)	Response
	"allowplanneddate_override": true }] }
Change of date (requires reason)	

{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "United States",
"site": "101",
"subject": "101-001",
"eventgroup_name": "egTREATMENT",
"event_name": "evV6" ,
"date": "2022-06-02",
"change_reason": "Change by IRT system"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egTREATMENT",
	"eventgroup_sequence": 1,
	"event_name": "evV6",
	"event_sequence": 1,
	"date": "2022-06-01",
	"externally_owned_date": true,
	"allowplanneddate_override": false,
	"change_reason": "Change by IRT system"
	}
	]
	}

Flow Based Example

For this subject in the EDC UI, there is no **Screening** date yet:



Performing the API call to set **Sept 1, 2021,** as **Screening** event date:

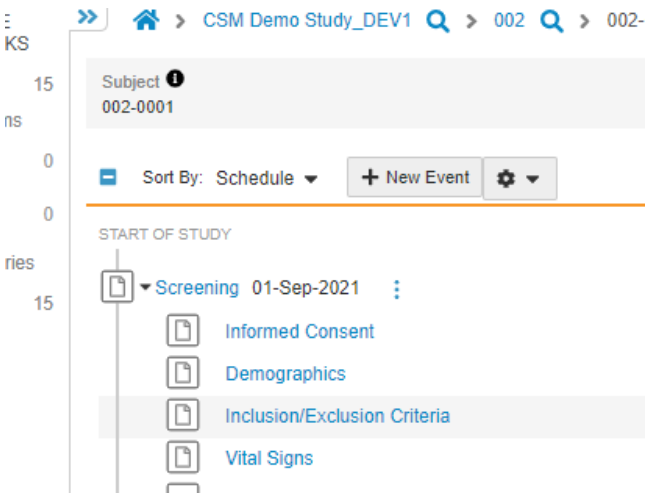
```
1  {
2      "study_name": "CSM Demo Study_DEV1",
3      "events": [
4          {
5              "study_country": "United States",
6              "site": "002",
7              "subject": "002-0001",
8              "eventgroup_name": "eg_SCREENING",
9              "event_name": "ev_SCREENING",
10             "date": "2021-09-01"
```

Body Cookies Headers (16) Test Results Status: 200

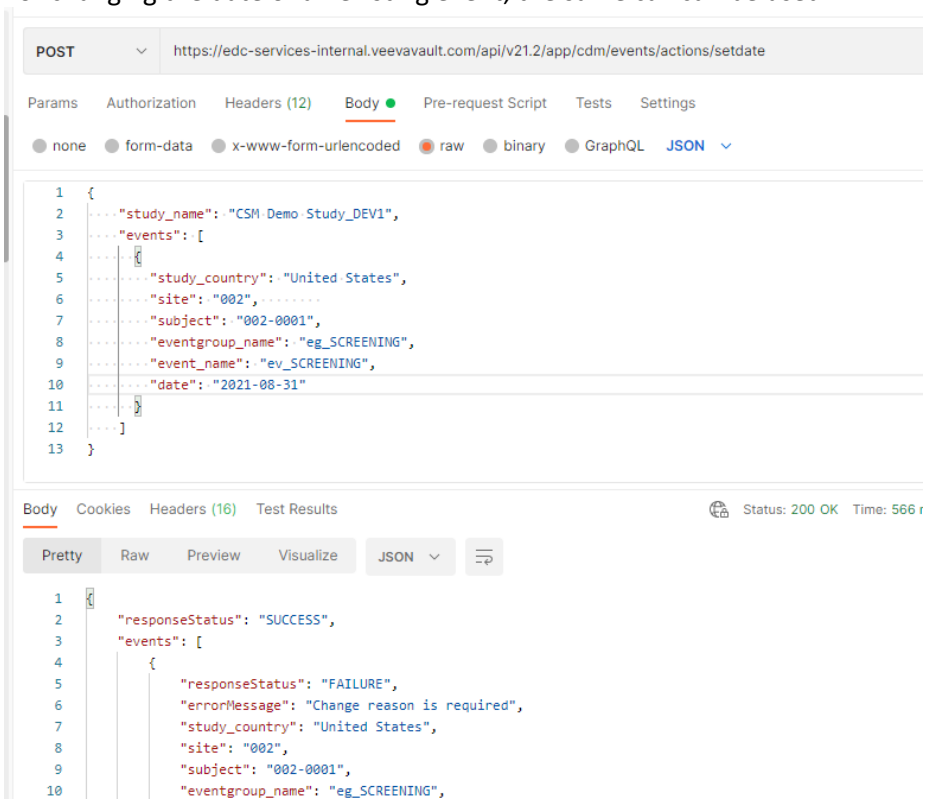
Pretty Raw Preview Visualize JSON

```
1  {
2      "responseStatus": "SUCCESS",
3      "events": [
4          {
5              "responseStatus": "SUCCESS",
6              "study_country": "United States",
7              "site": "002",
8              "subject": "002-0001",
9              "eventgroup_name": "eg_SCREENING",
10             "eventgroup_sequence": 1,
11             "event_name": "ev_SCREENING",
```

...which yields – in the EDC UI – the event now built out with the forms the study scheduled prescribes:



IMPORTANT: This step is key to then being able to set data to forms of an event. If the event does not have a date yet, then no forms will exist (for scheduled, non-log events).
For changing the date of an existing event, the same call can be used:



... **note (!!)** the inner **FAILURE**. Data points changed (after initial entry) require change reasons. Adding the parameter **change_reason**, with any custom reason:

POST https://edc-services-internal.veevavault.com/api/v21.2/app/cdm/events/actions/setdate

Params Authorization Headers (12) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

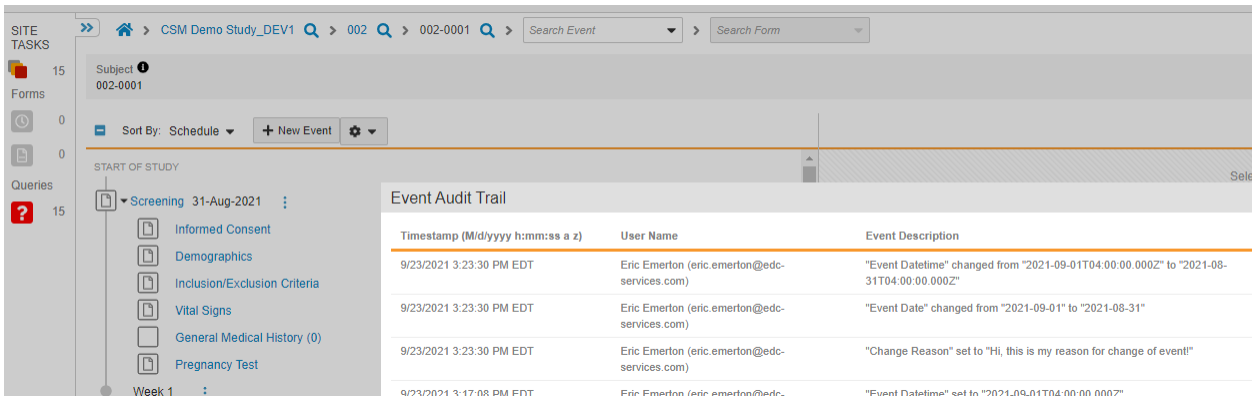
```
{
    "study_name": "CSM Demo Study_DEV1",
    "events": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "event_name": "ev_SCREENING",
            "change_reason": "Hi, this is my reason for change of event!",
            "date": "2021-08-31"
        }
    ]
}
```

Body Cookies Headers (16) Test Results Status: 200 OK Time: 806 ms S

Pretty Raw Preview Visualize JSON

```
{
    "responseStatus": "SUCCESS",
    "events": [
        {
            "responseStatus": "SUCCESS",
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "event_sequence": 1
        }
```

.. yielding – in the EDC UI - the change to Aug 31st, with reason passed via API noted in audit trail:



8.4 Set Event as Did Not Occur

Help Main	https://developer-cdms.veevavault.com/api/23.2/#set-event-as-did-not-occur
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/events/actions/didnotoccur
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	events	Required	Name of the study country (of the subject's site)
site	events	Required	Name/number of the site
subject	events	Required	Subject to act on
eventgroup_name	events	Required	Design **name** in the study of the event group where the event resides
eventgroup_sequence	events	Optional	The specific sequence of an event group, **1** if omitted
event_name	events	Required	Design **name** in the study of the event
change_reason	events	Required	The reason for date change. Only **required** when the event already has an event date set

Notes

- Used to mark an entire event with status = **Did Not Occur**, which then allows for visits after to be worked with, dates set.
- The limit for actions in one request is **100**.
- Change of reason can be any text, although certainly consider being consistent with the text usage.
- **TIP:** Although the example above is from a non-repeating event group, and **eventgroup_sequence** is not strictly required, it is good practice to always include this value. Repeating event groups, later forms will need specific values.

Examples

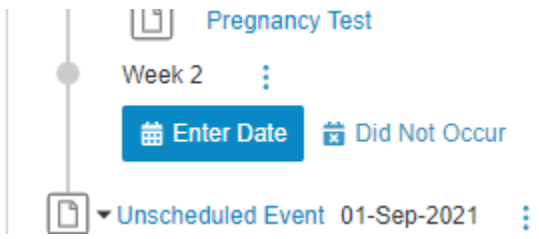
Description / Request (URL)	Response
One and successful	
`{ "study_name": "ABCP-2022-01_DEV1", "events": [ { "study_country": "United States", "site": "101", "subject": "101-001", "eventgroup_name": "egTREATMENT", "event_name": "evV6" , "change_reason": "Missed visit"`	`{ "responseStatus": "SUCCESS", "events": [ { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "101-001", "eventgroup_name": "egTREATMENT", "eventgroup_sequence": 1,`

Description / Request (URL)	Response
}] }	"event_name": "evV6", "event_sequence": 1 }] }
Multiple, one succeeds, one fails	

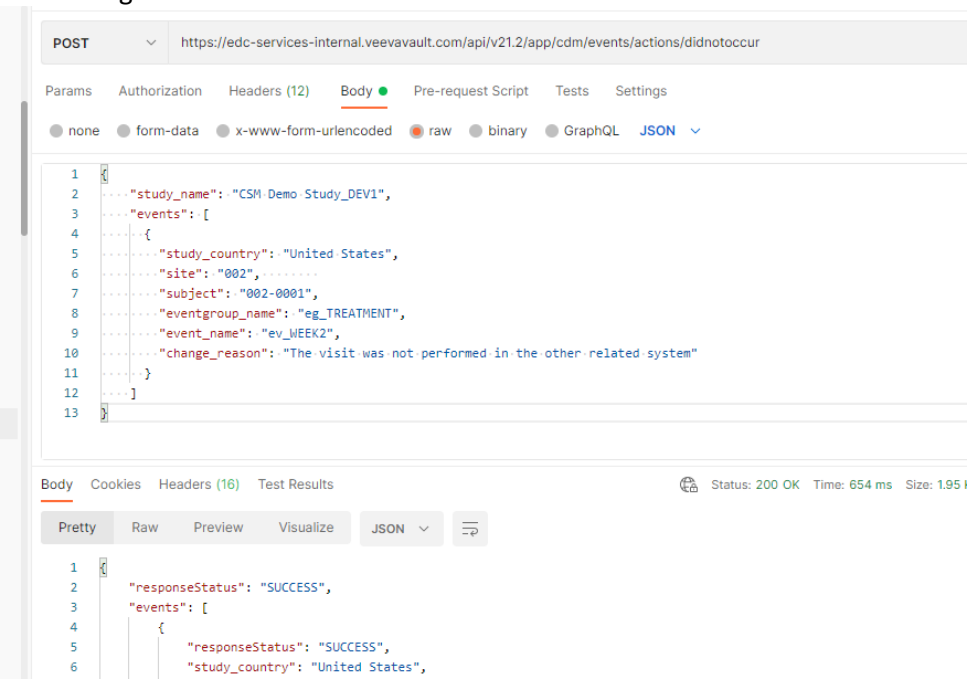
{
"study_name": "ABCP-2022-01_DEV1",
"events": [
{
"study_country": "Canada",
"site": "201",
"subject": "201-001",
"eventgroup_name": "egTREATMENT",
"event_name": "evV6" ,
"change_reason": "Missed visit"
},
{
"study_country": "Canada",
"site": "201",
"subject": "201-001",
"eventgroup_name": "egTREATMENT",
"event_name": "evV6" ,
"change_reason": "Missed visit"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"events": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "Canada",
	"site": "201",
	"subject": "201-001",
	"eventgroup_name": "egTREATMENT",
	"eventgroup_sequence": 1,
	"event_name": "evV6",
	"event_sequence": 1
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Subject] with name [201-005] not found",
	"study_country": "Canada",
	"site": "201",
	"subject": "201-005",
	"eventgroup_name": "egTREATMENT",
	"eventgroup_sequence": 1,
	"event_name": "evV6",
	"event_sequence": 1
	}
	]
	}

Flow Based Examples

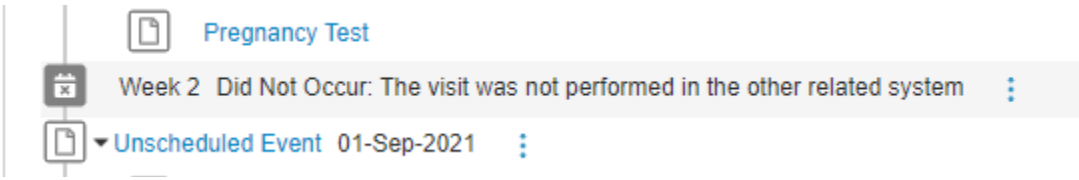
For the EDC visit without a date: (Week 2)



The setting of **Did Not Occu**r status + reason:



…resulting in the EDC UI showing status + reason:



9 Forms

NOTE: At the v23R1 release of the CDMS API, Veeva recommends targeted updates to a form (specific subject/form) using the **Combination Form Data API**. This API comprises the concepts of Upsert Forms, Upsert Item Group, Upsert Items, plus the conditional reopen of a form (should it be in submitted state), plus ability to submit the form after update. The key here is that **ONE** API call can handle all of the conditional singular APIs, done in an appropriate order. Additionally, the API will place a default change reason where one is omitted from the request, or take the one indicated in the request. Previously, based on unknown actions performed by sites in certain study designs to target forms of APIs, you might suddenly need a change reason + reopen of the form due to the site user inadvertently submitting the form as blank (before the API could push its data in appropriately.

9.1 Retrieve Forms / Item Data

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-forms
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/forms
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
study_country	Required	Name of the study country (of the subject's site)
site	Required	Name/number of the site
subject	Required	Subject to act on
eventgroup_name	Required	Design **name** in the study of the event group to filter to
eventgroup_sequence	Optional	The specific sequence of an event group
event_name	Required	Design **name** in the study of the event to filter to
form_name	Optional	Design **name** in the study of the form to filter to
form_sequence	Optional	The specific form sequence (if a repeating form) to filter to. (1 is assumed if omitted)
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Use this API to retrieve existing forms – their data (items, itemgroups) of one subject's event/visit.
- The details of the form's status, frozen/locked/ILB are also returned, in addition to the data on the form.
- The largest scope of the retrieval is one subject, and one event of the subject (the forms/data in that event)
- At present, there is no ability for a subset of form data, i.e., just certain fields from the filter. Forms of the event can be filtered, but all data of the form(s) is returned.
- The externally_owned property for each item will return **true** when the item was set via the API. This prevents updates of the field by the site user. A field can be 100% read only - via design

	property - or left as editable, with a read only nature applied only when the API sets a value to the field.

Examples

Description / Request (URL)	Response
Return a Demography form (some singular items are marked ILB, but not the whole form)	

....app/cdm/forms?study_name=ABCP-2022-01_DEV1&study_country=Canada&site=201&subject=SCR-0001&eventgroup_name=egSCR&eventgroup_sequence=1&event_name=evSCR&form_name=Demographics	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"forms": [
	{
	"id": "OPT00000001M002",
	"study_country": "Canada",
	"site": "201",
	"subject": "SCR-0001",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"event_external_id": null,
	"form_name": "Demographics",
	"form_sequence": 1,
	"form_status": "submitted__v",
	"locked": false,
	"frozen": false,
	"intentionally_left_blank": false,
	"itemgroups": [
	{
	"id": "V5C00000000T001",
	"itemgroup_name": "ig-DM",
	"itemgroup_sequence": 1,
	"itemgroup_external_id": "ig.DM",
	"items": [
	{
	"id": "V5D00000000T013",
	"item_name": "CHILDPSP",
	"value": null,
	"intentionally_left_blank": false,
	"externally_owned": false
	},
	{
	"id": "V5D00000000T014",
	"item_name": "RACE_OTHER",
	"value": "true",
	"intentionally_left_blank": false,

Description / Request (URL)	Response

	"externally_owned": **false**
	},
	{
	"id": "V5D00000000T015",
	"item_name": "RACE_NHORPI",
	"value": "false",
	"intentionally_left_blank": **false**,
	"externally_owned": **false**
	},
	{
	"id": "V5D00000000T015",
	"item_name": "RACE_AIORAN",
	"value": **null**,
	"intentionally_left_blank": **false**,
	"externally_owned": **false**
	},
	:
	:
	:
	{
	"id": "V5D00000000T045",
	"item_name": "CHILDSP",
	"value": "",
	"intentionally_left_blank": **true**,
	"intentionally_left_blank_reason": "Data unknown",
	"externally_owned": **false**
	}
	]
	}
	]
	}
	]
	}

Return data from a form with one of every type of item	

....app/cdm/forms?study_name=ABCP-2022-01_DEV1&study_country=Canada&site=201&subject=SCR-0001&eventgroup_name=egUNS&eventgroup_sequence=1&event_name=evUNS&form_name=OE	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"forms": [
	{
	"id": "OPT00000002F004",
	"study_country": "Canada",
	"site": "201",

Description / Request (URL)	Response
	"subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 1, "event_name": "evUNS", "event_sequence": 1, "event_external_id": null, "form_name": "OE", "form_sequence": 1, "form_status": "submitted__v", "locked": false, "frozen": false, "intentionally_left_blank": false, "itemgroups": [{ "id": "V5C00000000T001", "itemgroup_name": "igOE", "itemgroup_sequence": 1, "itemgroup_external_id": "igOE", "items": [{ "id": "V5D00000000T001", "item_name": "URL_FIELD", "value": "https://google.com", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T002", "item_name": "LONGTXT", "value": "Here is some long text with a line return, etc\nand more\nand more\nand so on.. the end", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T003", "item_name": "DATEONLY_UNKS", "value": "UN-Jun-2022", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T004", "item_name": "INTFIELD", "value": "23", "intentionally_left_blank": false, "externally_owned": false },

Description / Request (URL)	Response
	{ "id": "V5D00000000T005", "item_name": "DT_WITH_UNKS", "value": "UN-UNK-2022 UN:UN", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T006", "item_name": "DATEONLY", "value": "07-Jun-2022", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T007", "item_name": "SHORTTXT", "value": "Some text here", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T008", "item_name": "DATEANDTIME", "value": "06-Jun-2022 13:30", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T009", "item_name": "CL", "value": "Y", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T010", "item_name": "DECIMAL", "value": "3.2", "intentionally_left_blank": false, "externally_owned": false }, { "id": "V5D00000000T011", "item_name": "FORM_LINK_FIELD", "value": "OPT000000021003", "intentionally_left_blank": false, "externally_owned": false

Description / Request (URL)	Response

	`},`
	`{`
	`"id": "V5D00000000T012",`
	`"item_name": "UCLFIELD",`
	`"value": "0.45",`
	`"unit_value": "mg",`
	`"translated_value": "0.00045",`
	`"translated_unit_value": "g",`
	`"intentionally_left_blank": false,`
	`"externally_owned": false`
	`},`
	`{`
	`"id": "V5D00000000T013",`
	`"item_name": "UCLFIELD_W_LAB_MODIFIER",`
	`"value": "1",`
	`"unit_value": "mg",`
	`"translated_value": "0.01",`
	`"translated_unit_value": "g",`
	`"lab_modifier": "LT",`
	`"intentionally_left_blank": false,`
	`"externally_owned": false`
	`},`
	`{`
	`"id": "V5D00000000T015",`
	`"item_name": "CB",`
	`"value": "true",`
	`"intentionally_left_blank": false,`
	`"externally_owned": false`
	`}`
	`]`
	`}`
	`]`
	`}`
	`]`
	`}`

Items Array Response Properties

Property	Item Type(s)	Other Notes
id	All	
item_name	All	
value	All	
unit_value	Unit Codelist Only	
translated_value	Unit Codelist Only	

translated_unit_value	Unit Codelist Only	
lab_modifier	Unit Codelist (Local Lab Module)	When a local lab unit codelist is involved, **AND** the end user has set a value, otherwise omitted. The return is the codelist code of the selection (e.g. <, > , LT, GT, etc)
intentionally_left_blank	All	true/false
intentionally_left_blank	All	Only appears when its parent intentionally_left_blank = **true**

9.2 Combination Form Data Update

Help Main	https://developer-cdms.veevavault.com/api/23.2/#combo-form-data
Style(s)	**POST** (runs as upsert)
Endpoint	<your Vault URL>/api/v23.2/app/cdm/forms/actions/setdata
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
reopen		Optional	Boolean - when omitted the default is **true**. That is, if the form is currently in submitted status, it will be first re-opened for edit. A pass of false to this parameter with a form currently in submitted status will be an immediate abort/fail.
submit		Optional	Boolean - when omitted the default is **true**. That is, at the close of a successful update of data on the form, the form will be also submitted.
change_reason		Optional	If the form needs to be re-opened for edit (i.e. currently submitted), this is the reason applied. If omitted, and form is re-opened, "**Action performed via the API**" is used. This applies to **both** the change reason for open of a form (if necessary), and all items changed
externally_owned		Optional	Boolean - when omitted, true is assumed. When set to true, the fields that are updated are flagged as owned by the API. That is, site user actions like form reset / ILB cannot remove the data.
form		Required	(JSON section - i.e. **ONE** form in each submission)
study_country		Required	Name of the study country (of the subject's site)
site		Required	Name/number of the site
subject		Required	Subject to act on
eventgroup_name		Required	Design **name** in the study of the event group
eventgroup_sequence		Optional	The specific sequence of an event group. 1 assumed if omitted
event_name		Required	Design **name** in the study of the event
form_name		Required	Design **name** in the study of the form
form_sequence		Optional	The specific sequence of the form. 1 assumed if omitted
itemgroup_name	itemgroups	Required	Design **name** in the study of the item group location
itemgroup_sequence	itemgroups	Optional	The specific item group sequence where the item resides. 1 assumed if omitted
item_name	itemgroups/items	Required	Design **name** in the study of the item to set with value
value	itemgroups/items	Optional	Required - the node - but can use an empty value. That is, remove the currently set value from the field

	unit_value | itemgroups/items | Optional | Required when its a unit codelist item being updated

Notes	• The action is for setting data on fields of a form, primarily
	• It will conditionally also perform a series of actions as part of the singular API call.
	• These auto performed actions include:
	  ○ If the form is currently submitted -> the form is automatically reopened for edit (default it to always do this, when/if necessary)
	  ○ If it's a form from a repeating form section of the study's design, and does not yet exist, it will add that form. NOTE: 'Skipped' sequences are still invalid, e.g. if 3 forms existed and sequence = 5 was used -> this is an error path (because the form at sequence 4 can't be skipped)
	  ○ All necessary repeating item groups, for the intended item updates are automatically added
	  ○ Change reasons are automatically applies if/when necessary, and one does not otherwise specify a reason in the API request body
	  ○ Optionally, the final step can be to submit the form, once all data is applied (default here is to **not** submit the form, unless specifically requested)
	• What this API does **not** perform:
	  ○ Any level above 'Form' is not automatically dealt with, when not present. For example, the form lives in an event which does not yet exist, i.e. the study design dictates dynamic add, user manual add, or other. The API attempt will fail in this case, the combination actions are only from 'form down'
	  ○ If a form is locked, frozen, or part of locked subject, locked site, locked study → the form is not reopened. The first step is a failure. These actions were / are specific human decisions, not to be circumvented via an API attempt.
	  ○ IMPORTANT: This API does not 'rollback' when a step of many fails. That is, if the actual performed actions are Reopen form, Add new item groups, Set Item Data, and Submit Form (4 in total), and the Set Item Data fails → the end state is a reopened form, with new item groups added, i.e. partial success. A re-attempt of a corrected API would normally

Setting Data by Item Type

Item Type	Example	Notes
Checkbox		
	"value": "true"	i.e. checked
	"value": "false"	i.e. unchecked
	"value": ""	Has the same effect as false - Suggestion is to use true / false always in payload.
	(any other value)	**Error returned**
Codelist		
	"value": "Y"	I.e. assuming that codelist has a **code** value of "Y' in its
	"value": ""	Empty / unset the selection
	(any other value, i.e. not a codelist code)	**Error returned**
URL		
	"value": "https://www.google.com"	Set the value to a URL, on screen user can click to navigate to the URL,

Item Type	Example	Notes
		in another tab
	"value": ""	Empty / unset the value
	(any value that does not start http or ftp)	**Error returned**
Text Field		
	"value": "Here is my text in the field"	Set a value
	"value": ""	Empty / unset the value
	(value over max length)	**Error returned**
Numeric (Integer or Decimal)		
	"value": "3"	E.g. a field with precision = 0 (no decimal portion)
	"value": "13.4"	E.g. a decimal portion allowed field (precision > 0)
	"value": ""	Empty / unset the value
	(not numeric or violates length or precision)	**Error returned**
Date Field		
	"value": "2022-06-01"	E.g. to set June 1st, 2022
	"value": ""	Empty / unset the value
	"value": "2022-UN-UN"	E.g. when the field allows unknowns in month and/or day. **UN** must be used in the appropriate portion
	(bad date, not of proper format, YYYY-MM-DD)	**Error returned**
Date Time Field		
	"value": "2022-06-01T12:30:00Z"	Set the datetime in full, this will take on the 'on screen' value (not the normalized)
	"value": ""	Empty / unset the value
	(bad date, not of proper format, yyyy-MM-ddTHH:mmZ)	**Error returned**
Time Field		
	"value": "12:30"	Set the time value
	"value": ""	Empty / unset the value
	(bad date, not of proper format, HH:mm)	**Error returned**
Unit Codelist		
	"value": "62.2" "unit_value": "in"	E.g. 'in' is a valid **code** in the unit codelist definition.
	"value": "" "unit_value": ""	Empty / unset the value
	"value": "62.2"	**Error returned (must have both)**
	(any violation of length, precision, or invalid unit code)	**Error returned**

Examples

Description / Request (URL)	Response
Set of data on a form, simple case, reopen if necessary, also submit when finished	

{
"study_name": "ABC-XYZ-001_DEV1",
"reopen": true,
"submit": true,
"change_reason": "Integration Update",
"form": {
"study_country": "United States",
"site": "001",
"subject": "101-103",
"eventgroup_name": "egSCR",
"eventgroup_sequence": 1,
"event_name": "evSCR",
"form_name": "DM",
"form_sequence": 1,
"itemgroups": [
{
"itemgroup_name": "igBASE_DM",
"itemgroup_sequence": 1,
"items": [
{
"item_name": "BIRTHYR",
"value": "1976"
},
{
"item_name": "SEX",
"value": "M"
}
]
}
]
}
}
	{
	"responseStatus": "SUCCESS",
	"reopen": true,
	"submit": true,
	"change_reason": "Integration Update",
	"externally_owned": true,
	"form": {
	"id": "OPT000000000507",
	"form_status": "submitted__v",
	"study_country": "United States",
	"site": "001",
	"subject": "101-103",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "DM",
	"form_sequence": 1,
	"itemgroups": [
	{
	"responseStatus": "SUCCESS",
	"id": "V54000000006002",
	"itemgroup_name": "igBASE_DM",
	"itemgroup_sequence": 1,
	"items": [
	{
	"responseStatus": "SUCCESS",
	"id": "V55000000006005",
	"item_name": "BIRTHYR",
	"value": "1976"
	},
	{
	"responseStatus": "SUCCESS",
	"id": "V55000000006006",
	"item_name": "SEX",
	"value": "M"
	}
	]
	}
	]
	}
	}

Description / Request (URL)	Response
Form already open, so submit skipped (or false passed or omitted), and success but defaults used (i.e. no sequences, no change reason)	

{
"study_name": "ABC-XYZ-001_DEV1",
"reopen": true,
"submit": true,
"form": {
"study_country": "United States",
"site": "001",
"subject": "101-103",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "DM",
"itemgroups": [
{
"itemgroup_name": "igBASE_DM",
"items": [
{
"item_name": "BIRTHYR",
"value": "1976"
},
{
"item_name": "SEX",
"value": "M"
}
]
}
]
}
}
	{
	"responseStatus": "SUCCESS",
	"reopen": true,
	"submit": true,
	"change_reason": "Action performed via the API",
	"externally_owned": true,
	"form": {
	"id": "OPT000000000507",
	"form_status": "submitted__v",
	"study_country": "United States",
	"site": "001",
	"subject": "101-103",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "DM",
	"form_sequence": 1,
	"itemgroups": [
	{
	"responseStatus": "SUCCESS",
	"id": "V54000000006002",
	"itemgroup_name": "igBASE_DM",
	"itemgroup_sequence": 1,
	"items": [
	{
	"responseStatus": "SUCCESS",
	"id": "V55000000006005",
	"item_name": "BIRTHYR",
	"value": "1976"
	},
	{
	"responseStatus": "SUCCESS",
	"id": "V55000000006006",
	"item_name": "SEX",
	"value": "M"
	}
	]
	}
	]
	}
	}

Failure - Reopen fails (first step) since form is currently frozen	

Description / Request (URL)	Response

{
"study_name": "ABC-XYZ-001_DEV1",
"reopen": true,
"submit": true,
"form": {
"study_country": "United States",
"site": "001",
"subject": "101-103",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "DM",
"itemgroups": [
{
"itemgroup_name": "igBASE_DM",
"items": [
{
"item_name": "BIRTHYR",
"value": "1976"
},
{
"item_name": "SEX",
"value": "M"
}
]
}
]
}
}
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Form is frozen"
	}

Failure - Form gets reopened, BUT (!) an item group issue, i.e. stops at that stage	

{
"study_name": "ABC-XYZ-001_DEV1",
"reopen": true,
"submit": true,
"form": {
"study_country": "United States",
"site": "001",
"subject": "101-103",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "DM",
"itemgroups": [
{
"itemgroup_name": "igBASE_DM",
"itemgroup_sequence": 2,
"items": [
{
	{
	"responseStatus": "FAILURE",
	"errorMessage": "One or more [Item Group] updates failed",
	"reopen": true,
	"submit": true,
	"change_reason": "Action performed via the API",
	"externally_owned": true,
	"form": {
	"id": "OPT000000000507",
	"form_status": "in_progress_post_submit__v",
	"study_country": "United States",
	"site": "001",
	"subject": "101-103",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,

Description / Request (URL)	Response

"item_name": "BIRTHYR",
"value": "1976"
},
{
"item_name": "SEX",
"value": "M"
}
]
}
]
}
}
	"form_name": "DM",
	"form_sequence": 1,
	"itemgroups": [
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Non-repeating [Item Group Definition] with name [igBASE_DM] cannot have a sequence greater than 1",
	"itemgroup_name": "igBASE_DM",
	"itemgroup_sequence": 2,
	"items": [
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Update not attempted due to another error",
	"item_name": "BIRTHYR",
	"value": "1976"
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Update not attempted due to another error",
	"item_name": "SEX",
	"value": "M"
	}
	]
	}
	]
	}
	}

Failure - Item issues, so rollup message to IG and top	

{
"study_name": "ABC-XYZ-001_DEV1",
"reopen": true,
"submit": true,
"form": {
"study_country": "United States",
"site": "001",
"subject": "101-103",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "DM",
"itemgroups": [
	{
	"responseStatus": "FAILURE",
	"errorMessage": "One or more [Item] updates failed",
	"reopen": true,
	"submit": true,
	"change_reason": "Action performed via the API",
	"externally_owned": true,
	"form": {
	"id": "OPT000000000507",
	"form_status": "in_progress_post_submit__v",
	"study_country": "United States",

Description / Request (URL)	Response

{
"itemgroup_name": "igBASE_DM",
"items": [
{
"item_name": "BIRTHYR",
"value": "1976"
},
{
"item_name": "SEX",
"value": "MM"
}
]
}
]
}
}
	"site": "001",
	"subject": "101-103",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "DM",
	"form_sequence": 1,
	"itemgroups": [
	{
	"responseStatus": "FAILURE",
	"errorMessage": "One or more [Item] updates failed",
	"itemgroup_name": "igBASE_DM",
	"itemgroup_sequence": 1,
	"items": [
	{
	"responseStatus": "SUCCESS",
	"id": "V55000000006005",
	"item_name": "BIRTHYR",
	"value": "1976"
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Codelist Item Definition] with name [MM] not found",
	"item_name": "SEX",
	"value": "MM"
	}
	]
	}
	]
	}
	}

9.3 Create Forms

Help Main	https://developer-cdms.veevavault.com/api/23.2/#create-forms **NOTE:** If using this endpoint as part of a sequence to get form data updated, consider using the combination API (new at 23r1) - 9.9 Combination API - Upsert Form Data. The single endpoint will handle several in one call, and conditionally do any necessary actions without having to first inspect the existing state to perform the 'next' of the sequence of API calls. It includes add of repeating form (if not present), opening of the form (if submitted), adding of any necessary item groups (not already there), set of the item data, and optional submit of the form when finished.
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/forms
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	forms	Required	Name of the study country (of the subject's site)
site	forms	Required	Name/number of the site
subject	forms	Required	Subject to act on
eventgroup_name	forms	Required	Design **name** in the study of the event group
eventgroup_sequence	forms	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	forms	Required	Design **name** in the study of the event
form_name	forms	Required	Design **name** in the study of the form to add

Notes

- The action is for repeating form area of the study schedule, to add new ones as necessary
- The limit for actions in one request is **100**.
- It can also be used for a specific dynamic form area of the study design, to an event that **already** exists. (event non repeating)
- When the form does not yet exist, this action **MUST** be performed first, prior to setting data on the form. (Combination API(s) are part of coming release)
- Like many other API calls, batch add of many is allowed in one call. (Just more entries in the JSON array for **forms**)
- Like event groups, the POST / create will blindly add the 'next', in sequence. It's good practice to inspect what forms exist already as part of a sequence of API calls. Or one can use the **PUT** / upsert instead, passing a specific **form_sequence** – which will create if not present or skip/do nothing when the sequence does exist. (see next section **Upsert Forms**)
- **TIP:** For a non-repeating event group, and **eventgroup_sequence** not strictly required, it is good practice to always include this value. Repeating event groups, later forms will need specific values.

Examples

Description / Request (URL)	Response
Add of one form	

{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 1
	}
	]
	}

Add of two more forms, N+1 and N+2 are added (when current N exist)	

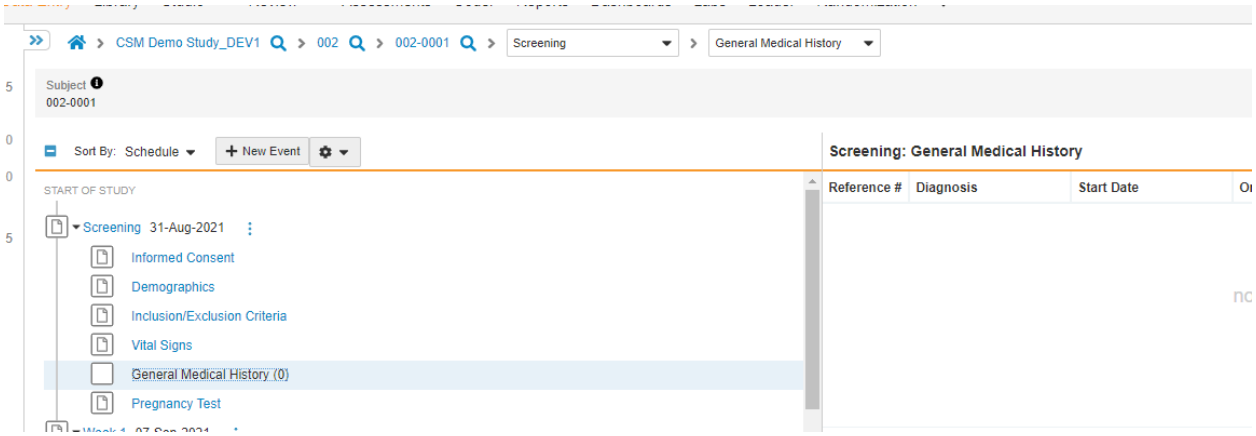
{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE"
},
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 2
	},
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",

Description / Request (URL)	Response
	"form_sequence": 3 }] }
Attempt to add two, but the last violates the maximum repeats of that design location in the study	

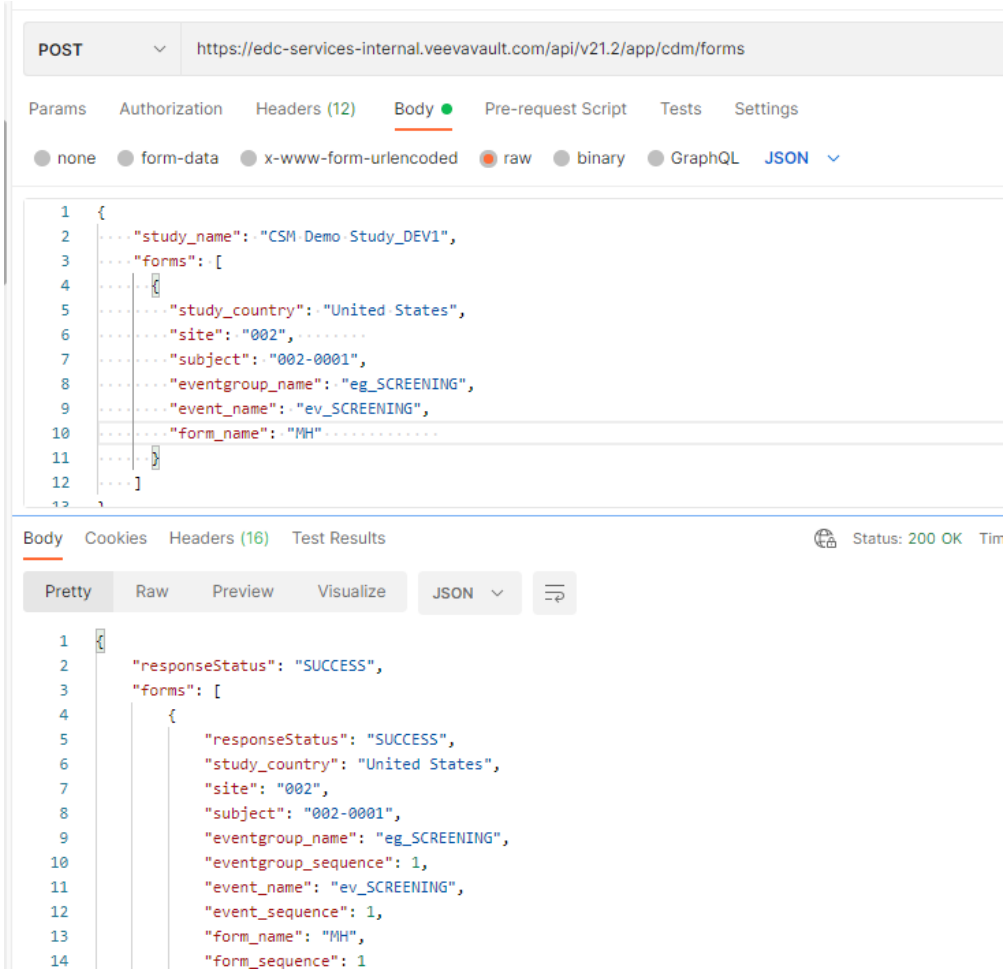
{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE"
},
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 4
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Maximum number of repeating records reached",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE"
	}
	]
	}

Flow Based Examples

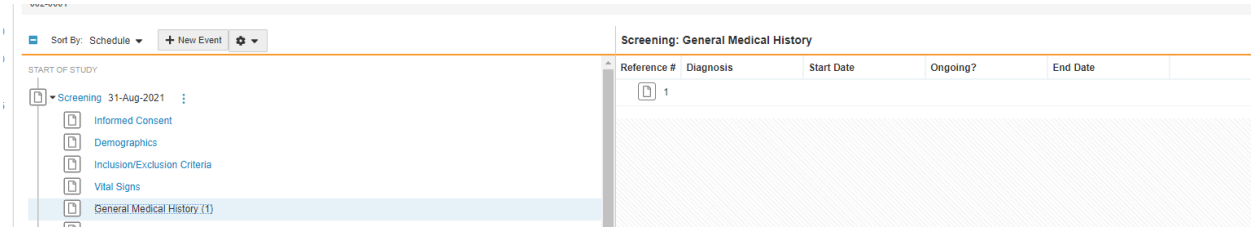
Consider this EDC form area, **General Medical History**, a repeating section:



The location, design name wise (use SDS or other to get mappings) is Event Group = **eg_SCREENING**, Event = **ev_SCREENING**, Form = **MH**. The attempt to add a new form:

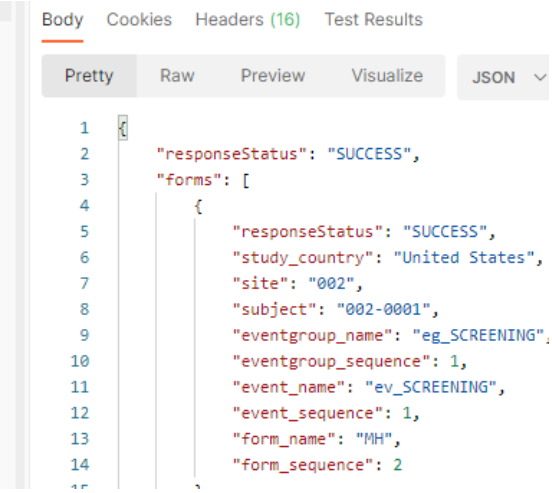


…which yields the new form in the EDC UI (blank):



The visual **'Reference #'** in the EDC UI is the API **form_sequence**.

Calling the API again (blindly):



.. note the **form_sequence**: **2** – i.e., a 2nd form is/was added. This can be dangerous in sequences where data is being updated, so inspecting existing forms is always recommended.

9.4 Upsert Forms

Help Main	https://developer-cdms.veevavault.com/api/23.2/#upsert-forms **NOTE:** If using this endpoint as part of a sequence to get form data updated, consider using the combination API (new at 23r1) - 9.9 Combination API - Upsert Form Data. The single endpoint will handle several in one call, and conditionally do any necessary actions without having to first inspect the existing state to perform the 'next' of the sequence of API calls. It includes add of repeating form (if not present), opening of the form (if submitted), adding of any necessary item groups (not already there), set of the item data, and optional submit of the form when finished.
Style	**PUT**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/forms
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	forms	Required	Name of the study country (of the subject's site)
site	forms	Required	Name/number of the site
subject	forms	Required	Subject to act on
eventgroup_name	forms	Required	Design **name** in the study of the event group
eventgroup_sequence	forms	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	forms	Required	Design **name** in the study of the event
form_name	forms	Required	Design **name** in the study of the form to add
form_sequence	forms	Required	The specific sequence to add (or skip, if already exists)

Notes

- The action is for repeating form area of the study schedule, to add new ones as necessary
- The limit for actions in one request is **100**.
- It can also be used for a specific dynamic form area of the study design, to an event that **already** exists. (event non repeating)
- When the form does not yet exist, this action **MUST** be performed first, prior to setting data on the form. (Combination API(s) are part of coming release)
- Like many other API calls, batch add of many is allowed in one call. (Just more entries in the JSON array for **forms**)
- The **Add Forms** (previous section) is the equivalent of clicking **Add** in the EDC UI, receiving the 'next' in sequence. This endpoint differs in that one is asking for a very specific sequence to be added (or skipped in add, if existing).
- **TIP:** For a non-repeating event group, and **eventgroup_sequence** not strictly required, it is good practice to always include this value. Repeating event groups, later forms will need specific values.
- **WARNING:** The sequences of forms should be added in order. Leaving a 'hole' (e.g. Form Sequence = 2, where Form Sequence = 1 entry does not exist) should be avoided, and will be enforced as an error at this or later release.

Examples

Description / Request (URL)	Response
Add of one (doesn't currently exist)	

{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE".
"form_sequence": 1
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 1
	}
	]
	}

Attempt Upsert at location where form exists already (Essentially SKIPPED)	

{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE".
"form_sequence": 1
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS:UPDATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 1
	}
	]
	}

Add of many, with the last hitting the maximum repeats of study design at that location	
{ "study_name": "ABCP-2022-01_DEV1", "forms": [{ "study_country": "United States",	{ "responseStatus": "SUCCESS", "forms": [{

Description / Request (URL)	Response

"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE".
"form_sequence": 4
},
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE".
"form_sequence": 5
},
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE".
"form_sequence": 6
}
]
}
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 4
	},
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 5
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Maximum number of repeating records reached",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 6
	}
	]
	}

9.5 Create Item Groups

Help Main	https://developer-cdms.veevavault.com/api/23.2/#create-item-groups **NOTE:** If using this endpoint as part of a sequence to get form data updated, consider using the combination API (new at 23r1) - 9.9 Combination API - Upsert Form Data. The single endpoint will handle several in one call, and conditionally do any necessary actions without having to first inspect the existing state to perform the 'next' of the sequence of API calls. It includes add of repeating form (if not present), opening of the form (if submitted), adding of any necessary item groups (not already there), set of the item data, and optional submit of the form when finished.
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/itemgroups
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	itemgroups	Required	Name of the study country (of the subject's site)
site	itemgroups	Required	Name/number of the site
subject	itemgroups	Required	Subject to act on
eventgroup_name	itemgroups	Required	Design **name** in the study of the event group
eventgroup_sequence	itemgroups	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	itemgroups	Required	Design **name** in the study of the event
form_name	itemgroups	Required	Design **name** in the study of the form
form_sequence	itemgroups	Optional	The specific sequence of the form where add will occur. 1 assumed if omitted
itemgroup_name	itemgroups	Required	Design **name** in the study of the item group to add

Notes

- The action is for repeating item groups, within a form that are repeating in nature (only).
- The limit for actions in one request is **100**.
- The endpoint is the equivalent of the EDC UI **Add Section** button, i.e. adds the 'next' in sequence
- The **Maximum Repeats** value of the study design will be enforced when attempting to add more than allowed by study design.
- When later setting data, the **Upsert Form Data** (later section) will automatically add any item groups that do not exist (and are repeating).
- Like many other API calls, batch add of many is allowed in one call. (Just more entries in the JSON array for **itemgroups**)
- Like event groups, forms that repeat, the **POST** / create will blindly add the 'next', in sequence. It's good practice to inspect what forms exist already as part of a sequence of API calls. Or one can use the **PUT** / Upsert instead (next section), passing a specific **itemgroup_sequence** – which will create if not present or skip/do nothing when the sequence does exist.

Examples

Description / Request (URL)	Response
Add of one (next)	

{
"study_name": "ABCP-2022-01_DEV1",
"itemgroups": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE2"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"itemgroups": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	"itemgroup_sequence": 1
	}
	]
	}

Add of three, but maximum repeats is 2 at that location	
{ "study_name": "ABCP-2022-01_DEV1", "itemgroups": [{ "study_country": "United States", "site": "101", "subject": "SCR-0002", "eventgroup_name": "egSCR", "event_name": "evSCR", "form_name": "IE", "form_sequence": 1, "itemgroup_name": "ig-IE2" }, { "study_country": "United States", "site": "101", "subject": "SCR-0002", "eventgroup_name": "egSCR", "event_name": "evSCR", "form_name": "IE", "form_sequence": 1, "itemgroup_name": "ig-IE2" }, { "study_country": "United States",	{ "responseStatus": "SUCCESS", "itemgroups": [{ "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0002", "eventgroup_name": "egSCR", "eventgroup_sequence": 1, "event_name": "evSCR", "event_sequence": 1, "form_name": "IE", "form_sequence": 1, "itemgroup_name": "ig-IE2", "itemgroup_sequence": 1 }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0002", "eventgroup_name": "egSCR", "eventgroup_sequence": 1, "event_name": "evSCR",

Description / Request (URL)	Response

"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE2"
}
]
}
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	"itemgroup_sequence": 2
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Maximum number of repeating records reached",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2"
	}
	]
	}

Flow Based Example

The location, design name wise (use SDS or other to get mappings) is Event Group = **eg_SCREENING**, Event = **ev_SCREENING**, Form = **IE,** Item Group = **IECAT**. The first item group add:

POST https://edc-services-internal.veevavault.com/api/v21.2/app/cdm/itemgroups

Params Authorization Headers (12) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

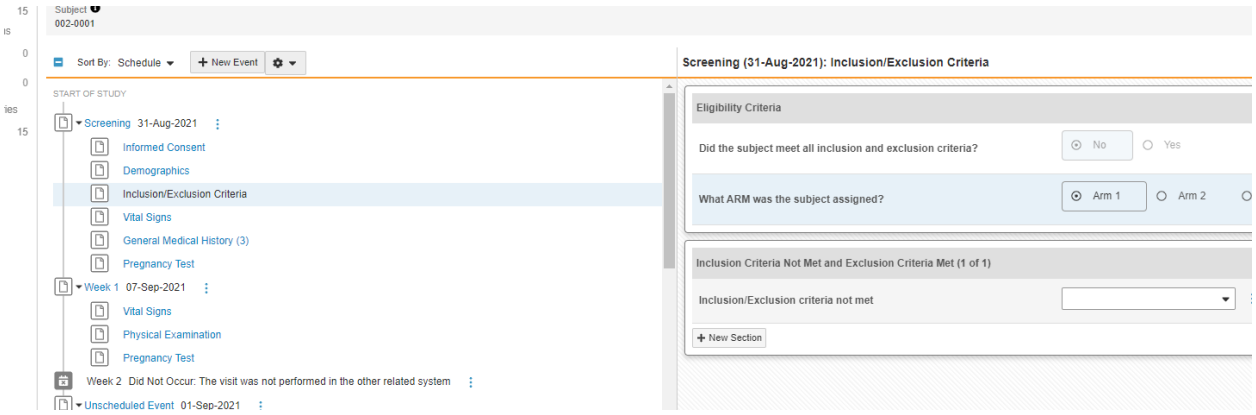
```
1  {
2      "study_name": "CSM Demo Study_DEV1",
3      "itemgroups": [
4          {
5              "study_country": "United States",
6              "site": "002",
7              "subject": "002-0001",
8              "eventgroup_name": "eg_SCREENING",
9              "eventgroup_sequence": 1,
10             "event_name": "ev_SCREENING",
11             "form_name": "IE",
12             "form_sequence": 1,
13             "itemgroup_name": "IECAT"
14         }
15     ]
```

Body Cookies Headers (16) Test Results Status: 200 OK Tin

Pretty Raw Preview Visualize JSON

```
1  {
2      "responseStatus": "SUCCESS",
3      "itemgroups": [
4          {
5              "responseStatus": "SUCCESS",
6              "study_country": "United States",
7              "site": "002",
8              "subject": "002-0001",
9              "eventgroup_name": "eg_SCREENING",
10             "eventgroup_sequence": 1,
11             "event_name": "ev_SCREENING",
12             "event_sequence": 1,
13             "form_name": "IE",
14             "form_sequence": 1,
15             "itemgroup_name": "IECAT",
16             "itemgroup_sequence": 1
17         }
18     ]
```

… resulting in the EDC UI view:



Calling the **POST** again, a 2nd will be blindly added. Always consider inspecting what is currently on the form during an update sequence.

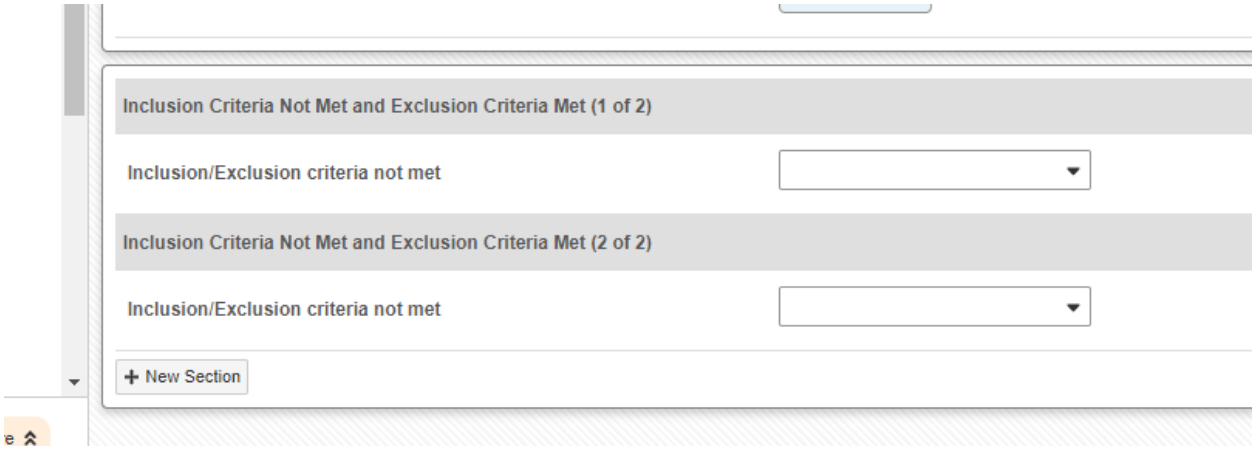
```
{
    "study_name": "CSM Demo Study_DEV1",
    "itemgroups": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "form_name": "IE",
            "form_sequence": 1,
            "itemgroup_name": "IECAT"
        }
    ]
```

Body Cookies Headers (16) Test Results

Pretty Raw Preview Visualize JSON

```
{
    "responseStatus": "SUCCESS",
    "itemgroups": [
        {
            "responseStatus": "SUCCESS",
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "event_sequence": 1,
            "form_name": "IE",
            "form_sequence": 1,
            "itemgroup_name": "IECAT",
            "itemgroup_sequence": 2
```

… with result a 2nd item group / area on the form:



9.6 Upsert Item Groups

Help Main	https://developer-cdms.veevavault.com/api/23.2/#upsert-item-groups **NOTE:** If using this endpoint as part of a sequence to get form data updated, consider using the combination API (new at 23r1) - 9.9 Combination API - Upsert Form Data. The single endpoint will handle several in one call, and conditionally do any necessary actions without having to first inspect the existing state to perform the 'next' of the sequence of API calls. It includes add of repeating form (if not present), opening of the form (if submitted), adding of any necessary item groups (not already there), set of the item data, and optional submit of the form when finished.
Style	**PUT**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/itemgroups
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	itemgroups	Required	Name of the study country (of the subject's site)
site	itemgroups	Required	Name/number of the site
subject	itemgroups	Required	Subject to act on
eventgroup_name	itemgroups	Required	Design **name** in the study of the event group
eventgroup_sequence	itemgroups	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	itemgroups	Required	Design **name** in the study of the event
form_name	itemgroups	Required	Design **name** in the study of the form
form_sequence	itemgroups	Optional	The specific sequence of the form where add will occur. 1 assumed if omitted
itemgroup_name	itemgroups	Required	Design **name** in the study of the item group to add
itemgroup_sequence	itemgroups	Required	The specific sequence to add, or skip if it does not exist yet

Notes

- The action is for repeating item groups, within a form that are repeating in nature (only).
- The limit for actions in one request is **100**.
- The endpoint is the equivalent of the EDC UI **Add Section** button, but for a specific sequence. The action will add the item group if it does not exist, or skip the action if it already exists.
- The **Maximum Repeats** value of the study design will be enforced when attempting to add more than allowed by study design.
- **Unlike** the upsert for event groups and forms, the attempt to upsert at a sequence where it would otherwise leave 'gaps' in the sequences, the attempt for itemgroups will instead add all necessary. Example: No item groups exist currently, and attempt uses itemgroup_sequence=3, the result will be the addition of 3 item groups, sequence 1, 2, and 3.
- **TIP:** When later setting data, the **Upsert Form Data** (later section) will automatically add any item groups that do not exist (and are repeating). This alleviates the need to inspect and add item groups before setting specific data (i.e. need to do both)
- Like many other API calls, batch add of many is allowed in one call. (Just more entries in the JSON array for **itemgroups**)

Examples

Description / Request (URL)	Response
Two adds, successful	

{
"study_name": "ABCP-2022-01_DEV1",
"itemgroups": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0006",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE2",
"itemgroup_sequence": 1
},
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0006",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE2",
"itemgroup_sequence": 2
}
]
}
	{
	"responseStatus": "SUCCESS",
	"itemgroups": [
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	"itemgroup_sequence": 1
	},
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	"itemgroup_sequence": 2
	}
	]
	}

Add attempt, but the item group already exists (essentially SKIPPED)	
{ "study_name": "ABCP-2022-01_DEV1", "itemgroups": [{ "study_country": "United States", "site": "101", "subject": "SCR-0006", "eventgroup_name": "egSCR", "event_name": "evSCR", "form_name": "IE",	{ "responseStatus": "SUCCESS", "itemgroups": [{ "responseStatus": "SUCCESS:UPDATED", "study_country": "United States", "site": "101", "subject": "SCR-0006", "eventgroup_name": "egSCR", "eventgroup_sequence": 1,

Description / Request (URL)	Response
"form_sequence": 1, "itemgroup_name": "ig-IE2", "itemgroup_sequence": 1 }] }	"event_name": "evSCR", "event_sequence": 1, "form_name": "IE", "form_sequence": 1, "itemgroup_name": "ig-IE2", "itemgroup_sequence": 1 }] }
Add of a later sequence - the result is add of all 'up to', i.e. gaps filled	

{
"study_name": "ABCP-2022-01_DEV1",
"itemgroups": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0007",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE2",
"itemgroup_sequence": 2
}
]
}
	{
	"responseStatus": "SUCCESS",
	"itemgroups": [
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	"itemgroup_sequence": 1
	},
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	"itemgroup_sequence": 2
	}
	]
	}

Add of a later sequence - the result is add of all 'up to', i.e. gaps filled	
{ "study_name": "ABCP-2022-01_DEV1",	{ "responseStatus": "SUCCESS",

Description / Request (URL)	Response

"itemgroups": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0006",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE2",
"itemgroup_sequence": 5
},
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0006",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE2",
"itemgroup_sequence": 6
}
]
}
	"itemgroups": [
	{
	"responseStatus": "SUCCESS:CREATED",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	"itemgroup_sequence": 5
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Maximum number of repeating records reached",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE2",
	}
	]
	}

9.7 Set/Upsert Form Data (Items)

Help Main	https://developer-cdms.veevavault.com/api/23.2/#set-form-data (**POST**) https://developer-cdms.veevavault.com/api/23.2/#upsert-form-data (**PUT**, to same endpoint) **NOTE:** If using this endpoint as part of a sequence to get form data updated, consider using the combination API (new at 23r1) - 9.9 Combination API - Upsert Form Data. The single endpoint will handle several in one call, and conditionally do any necessary actions without having to first inspect the existing state to perform the 'next' of the sequence of API calls. It includes add of repeating form (if not present), opening of the form (if submitted), adding of any necessary item groups (not already there), set of the item data, and optional submit of the form when finished.
Style(s)	**POST** (runs as add / update) **PUT** (runs as upsert)
Endpoint	<your Vault URL>/api/v23.2/app/cdm/items
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	forms	Required	Name of the study country (of the subject's site)
site	forms	Required	Name/number of the site
subject	forms	Required	Subject to act on
eventgroup_name	forms	Required	Design **name** in the study of the event group
eventgroup_sequence	forms	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	forms	Required	Design **name** in the study of the event
form_name	forms	Required	Design **name** in the study of the form
form_sequence	forms	Optional	The specific sequence of the form. 1 assumed if omitted
itemgroup_name	forms/items	Required	Design **name** in the study of the item group location
itemgroup_sequence	forms/items	Optional	The specific item group sequence where the item resides. 1 assumed if omitted
item_name	forms/items	Required	Design **name** in the study of the item to set with value
value	forms/items	Optional	Required - the node - but can use an empty value. That is, remove the currently set value from the field
unit_value	forms/items	Optional	Required when its a unit codelist item being updated
externally_owned	forms/items	Optional	When omitted, **true** is used. The property will lock down the field/item, such that the site user can make no further edits. The Reset Form action will also keep the data intact.

Notes

- The action is for setting data on fields of a form
- The limit for actions in one request is **25** forms total, and no one form with items more than **100**.
- The differences between **POST** and **PUT** style:
  - **POST** style requires that all item groups (i.e. if repeating) must exist first.
  - **PUT** style does not require the specific upsert of any necessary item groups on the form. They are automatically added where needed
  - The 'inner' status on the PUT style includes the secondary status of ':CREATED' (item group of the item was created) or ':UPDATED' (item already existed)

	○ **TIP:** Consider always using the PUT / upsert. ● Note the array at top level is the **forms** (json array) to direct data to, multiple forms can be targeted in one API call. The 2nd level items, which are the items on that form, each of which requires itemgroup_name, item_name, value, and other parameters, based on the field type. ● See the table below for guidelines based on EDC field type ● **WARNING:** If a form is submitted state, it must first be opened for edit via a different API endpoint, Edit Form (later section), before proceeding with the update of data. Currently there is no parameter to allow for conditional open for edit, during the call to update data on a form, not a parameter to additionally submit the form once data is updated/added. ● **TIP:** Although the example above is from a Screening event, in a non-repeating event group, and **eventgroup_sequence** is not strictly required it is good practice to always include this value. The same is true for the sequence of form, and of course itemgroup (of the items being updated) ● **WARNING**: As of the 22R2 release - item groups on forms that are used in the Local Labs module are disallowed from updates through the API.

Setting Data by Item Type

Item Type	Example	Notes
Checkbox		
	"value": "true"	i.e. checked
	"value": "false"	i.e. unchecked
	"value": ""	Has the same effect as false - Suggestion is to use true / false always in payload.
	(any other value)	**Error returned**
Codelist		
	"value": "Y"	I.e. assuming that codelist has a **code** value of "Y' in its
	"value": ""	Empty / unset the selection
	(any other value, i.e. not a codelist code)	**Error returned**
URL		
	"value": "https://www.google.com"	Set the value to a URL, on screen user can click to navigate to the URL, in another tab
	"value": ""	Empty / unset the value
	(any value that does not start http or ftp)	**Error returned**
Text Field		
	"value": "Here is my text in the field"	Set a value
	"value": ""	Empty / unset the value
	(value over max length)	**Error returned**
Numeric (Integer or Decimal)		
	"value": "3"	E.g. a field with precision = 0 (no decimal portion)
	"value": "13.4"	E.g. a decimal portion allowed field (precision > 0)
	"value": ""	Empty / unset the value
	(not numeric or violates length or precision)	**Error returned**

Item Type	Example	Notes
Date Field		
	"value": "2022-06-01"	E.g. to set June 1st, 2022
	"value": ""	Empty / unset the value
	"value": "2022-UN-UN"	E.g. when the field allows unknowns in month and/or day. **UN** must be used in the appropriate portion
	(bad date, not of proper format, YYYY-MM-DD)	**Error returned**
Date Time Field		
	"value": "2022-06-01T12:30:00Z"	Set the datetime in full, this will take on the 'on screen' value (not the normalized)
	"value": ""	Empty / unset the value
	(bad date, not of proper format, yyyy-MM-ddTHH:mmZ)	**Error returned**
Time Field		
	"value": "12:30"	Set the time value
	"value": ""	Empty / unset the value
	(bad date, not of proper format, HH:mm)	**Error returned**
Unit Codelist		
	"value": "62.2" "unit_value": "in"	E.g. 'in' is a valid **code** in the unit codelist definition.
	"value": "" "unit_value": ""	Empty / unset the value
	"value": "62.2"	**Error returned (must have both)**
	(any violation of length, precision, or invalid unit code)	**Error returned**

Examples

Description / Request (URL)	Response
Set of data on a form with one of each field/item type	
{ "study_name": "ABCP-2022-01_DEV1", "forms": [{ "site": "101", "study_country": "United States", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "form_name": "OE",	{ "responseStatus": "SUCCESS", "items": [{ "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS",

Description / Request (URL)	Response
"form_sequence": 1, "items": [{ "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "CB", "value": "true" }, { "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "CL", "value": "Y" }, { "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "DATEONLY", "value": "2022-06-01" }, { "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "DATEONLY_UNKS", "value": "2022-UN-UN" }, { "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "DATEANDTIME", "value": "2022-06-01T12:30Z" }, { "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "DT_WITH_UNKS", "value": "2022-06-UNTUN:UNZ" }, { "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "INTFIELD", "value": "3" }, { "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "DECIMAL",	"event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "CB", "value": "true", "externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "CL", "value": "Y", "externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "DATEONLY", "value": "2022-06-01", "externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001",

Description / Request (URL)	Response

"value": "5.2"
},
{
"itemgroup_name": "igOE",
"itemgroup_sequence": 1,
"item_name": "UCLFIELD",
"value": "2.1",
"unit_value": "double_std"
},
{
"itemgroup_name": "igOE",
"itemgroup_sequence": 1,
"item_name": "URL_FIELD",
"value": "https://www.google.com"
},
{
"itemgroup_name": "igOE",
"itemgroup_sequence": 1,
"item_name": "SHORTTXT",
"value": "Some text short"
},
{
"itemgroup_name": "igOE",
"itemgroup_sequence": 1,
"item_name": "LONGTXT",
"value": "Some text in a long text field \n with a line break in the payload"
}
]
}
]
}
	"eventgroup_name": "egUNS",
	"eventgroup_sequence": 3,
	"event_name": "evUNS",
	"event_sequence": 1,
	"form_name": "OE",
	"form_sequence": 1,
	"itemgroup_name": "igOE",
	"itemgroup_sequence": 1,
	"item_name": "DATEONLY_UNKS",
	"value": "2022-UN-UN",
	"externally_owned": true
	},
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"eventgroup_name": "egUNS",
	"eventgroup_sequence": 3,
	"event_name": "evUNS",
	"event_sequence": 1,
	"form_name": "OE",
	"form_sequence": 1,
	"itemgroup_name": "igOE",
	"itemgroup_sequence": 1,
	"item_name": "DATEANDTIME",
	"value": 2022-06-01T12:30Z",
	"externally_owned": true
	},
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"eventgroup_name": "egUNS",
	"eventgroup_sequence": 3,
	"event_name": "evUNS",
	"event_sequence": 1,
	"form_name": "OE",
	"form_sequence": 1,
	"itemgroup_name": "igOE",
	"itemgroup_sequence": 1,
	"item_name": "DT_WITH_UNKS",
	"value": "2022-06-UNTUN:UNZ",
	"externally_owned": true
	},
	{
	"responseStatus": "SUCCESS",

Description / Request (URL)	Response
	"study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "INTFIELD", "value": "3", "externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "DECIMAL", "value": "5.2", "externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "UCLFIELD", "value": "2.1", "unit_value": "double_std",

Description / Request (URL)	Response
	"externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "URL_FIELD", "value": "https://www.google.com" , "externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE", "itemgroup_sequence": 1, "item_name": "SHORTTXT", "value": "Some text short", "externally_owned": true }, { "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0001", "eventgroup_name": "egUNS", "eventgroup_sequence": 3, "event_name": "evUNS", "event_sequence": 1, "form_name": "OE", "form_sequence": 1, "itemgroup_name": "igOE",

Description / Request (URL)	Response
	"itemgroup_sequence": 1, "item_name": "LONGTXT", "value": "Some text in a long text field \n with a line break in the payload" , "externally_owned": true }] }
Change of an item (i.e. reopened form, then update)	

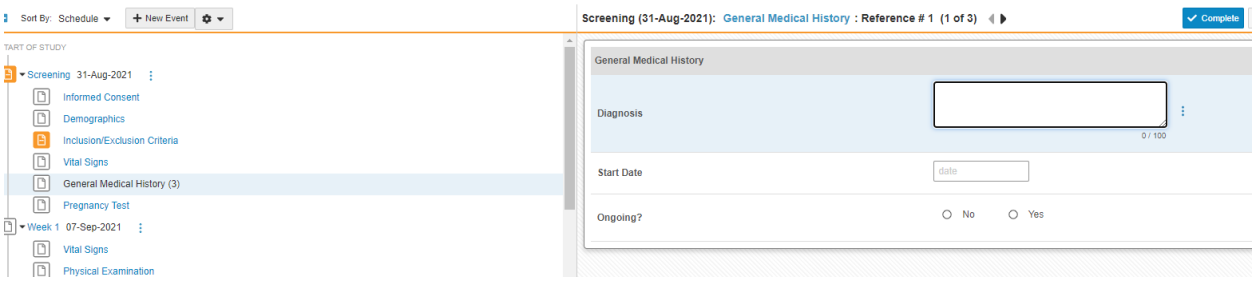
{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"site": "101",
"study_country": "United States",
"subject": "SCR-0002",
"eventgroup_name": "egSCR",
"eventgroup_sequence": 1,
"event_name": "evSCR",
"form_name": "DM",
"form_sequence": 1,
"items": [
{
"itemgroup_name": "ig-DM",
"itemgroup_sequence": 1,
"item_name": "BRTHDAT",
"value": "1981-03-03",
"change_reason": "Updated by integration"
}
]
}
]
}
	{
	"responseStatus": "SUCCESS",
	"items": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "DM",
	"form_sequence": 1,
	"itemgroup_name": "ig-DM",
	"itemgroup_sequence": 1,
	"item_name": "BRTHDAT",
	"value": "1981-03-03",
	"change_reason": "Updated by integration",
	"externally_owned": true
	}
	]
	}

PUT style (upsert)	
Other examples apply, except the response status indicates if the item was created (in an item group that was also created, or updated if it already exists). 'SUCCESS:UPDATED' is also returned if no changes were made.	{ "responseStatus": "SUCCESS", "items": [{ "responseStatus": "SUCCESS:CREATED", : : **OR**

Description / Request (URL)	Response
	{ "responseStatus": "SUCCESS", "items": [{ "responseStatus": "SUCCESS:UPDATED", : :

Flow Based Examples

Consider the **General Medical History** form of **Screening** visit of the example study:



… it has 3 items on it. It is a repeating form, so **form_sequence** value in the API call is vital. There are no repeating item groups on the form, so **itemgroup_sequence** for each of the items is '**1**' (or can be omitted from the request)

The API body setting 2 of the 3 items:

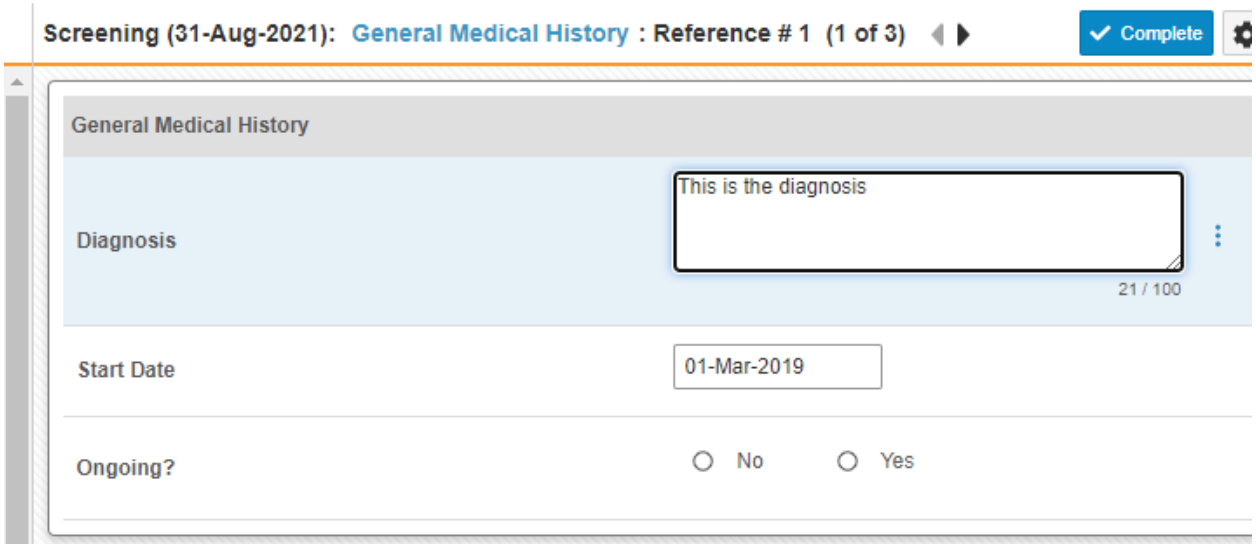
POST https://edc-services-internal.veevavault.com/api/v21.2/app/cdm/items

Params Authorization Headers (12) Body Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
{
    "study_name": "CSM Demo Study_DEV1",
    "forms": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "form_name": "MH",
            "form_sequence": 1,
            "items": [
                {
                    "itemgroup_name": "MH",
                    "itemgroup_sequence": 1,
                    "item_name": "MHTERM",
                    "value": "This is the diagnosis"
                },
                {
                    "itemgroup_name": "MH",
                    "itemgroup_sequence": 1,
                    "item_name": "MHSTDAT",
                    "value": "2019-03-01"
```

Yields, in EDC UI:

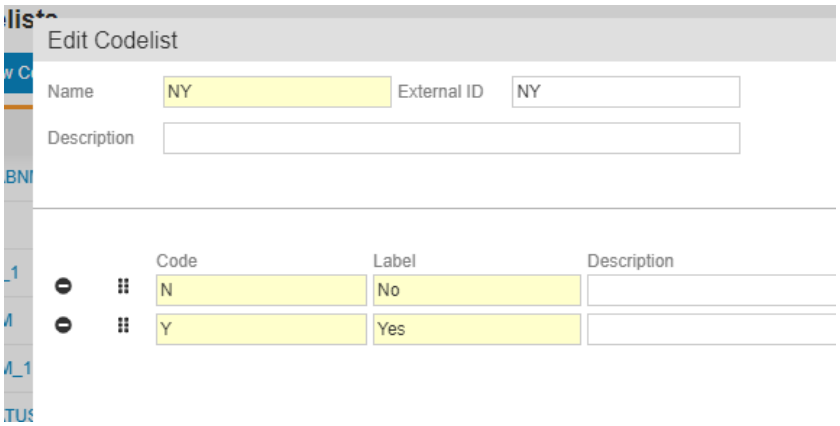


The form is still in edit mode, to submit a form the Submit Form (next section) is called afterwards. There is not currently a parameter on the set items endpoint to also submit the form, although combination APIs are part of coming releases.

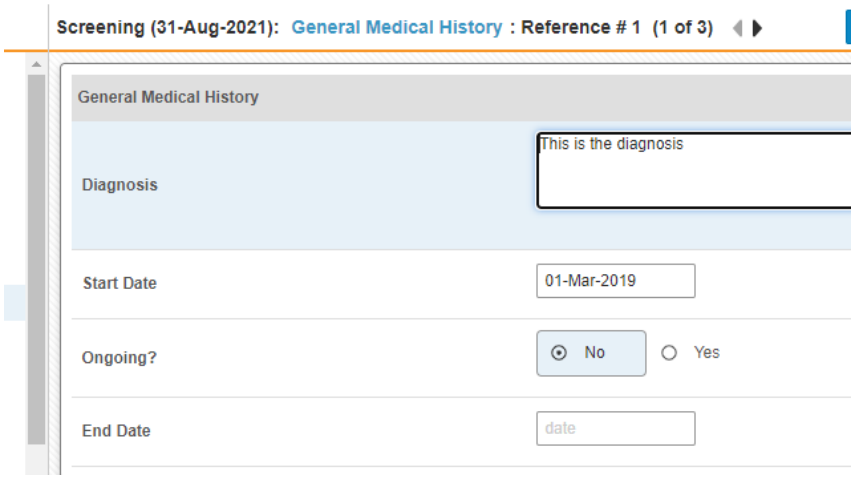
A 2nd API submit to the form, to set **Ongoing** = **No**, uses this additional section of the items JSON array:

```
24            "value": "2019-03-01"
25        },
26        {
27            "itemgroup_name": "MH",
28            "itemgroup_sequence": 1,
29            "item_name": "MHONGO",
30            "value": "N"
31        }
```

Importantly, the **N** value is from a codelist code of a study design, which can be found in the study SDS, or from Studio:



Dynamic fields are often part of form design, in this case, the set of Ongoing = **No**, unhides in the EDC UI a 4th field, **End Date**:



Although this form has been set with multiple API endpoint calls, it can be set – all 4 fields – in one endpoint call, even for fields that are hidden from view:


```
"items": [
    {
        "itemgroup_name": "MH",
        "itemgroup_sequence": 1,
        "item_name": "MHTERM",
        "value": "This is the diagnosis"
    },
    {
        "itemgroup_name": "MH",
        "itemgroup_sequence": 1,
        "item_name": "MHSTDAT",
        "value": "2019-03-01"
    },
    {
        "itemgroup_name": "MH",
        "itemgroup_sequence": 1,
        "item_name": "MHONGO",
        "value": "N"
    },
    {
        "itemgroup_name": "MH",
        "itemgroup_sequence": 1,
        "item_name": "MHENDAT",
        "value": "2020-01-31"
    }
]
}
```


IMPORTANT: Always be reticent of any dynamic fields on the form. The set of Ongoing = **Y** (Yes) would be allowed, with an end date via the API endpoint, even though the data would not make sense per the form's dynamic rules.
For submitted forms (different API, next section), like:

Screening: General Medical History

Reference #	Diagnosis	Start Date	Ongoing?	End Date
1	This is the diagnosis	01-Mar-2019	No	31-Jan-2020

… a reason for change will be required for any field update, after the first submit of the form. Additionally, the form won't allow edits when in submitted state. So, this attempt to update the **Diagnosis** field:

```
{
    "study_name": "CSM Demo Study_DEV1",
    "forms": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "form_name": "MH",
            "form_sequence": 1,
            "items": [
                {
                    "itemgroup_name": "MH",
                    "itemgroup_sequence": 1,
                    "item_name": "MHTERM",
                    "value": "Headaches",
                    "change_reason": "This is a custom reason for field value"
                }
            ]
        }
    ]
}
```

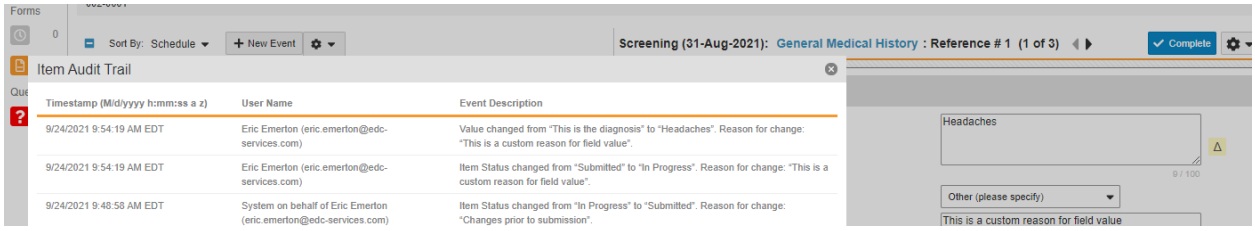
Is met with:

```
{
    "responseStatus": "SUCCESS",
    "items": [
        {
            "responseStatus": "FAILURE",
            "errorMessage": "Items on submitted forms cannot be edited",
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "event_sequence": 1,
            "form_name": "MH",
            "form_sequence": 1,
            "itemgroup_name": "MH",
```

With the form opened for edit (its API endpoint is later section), notice the **change_reason** parameter, which can be any text necessary to the update:

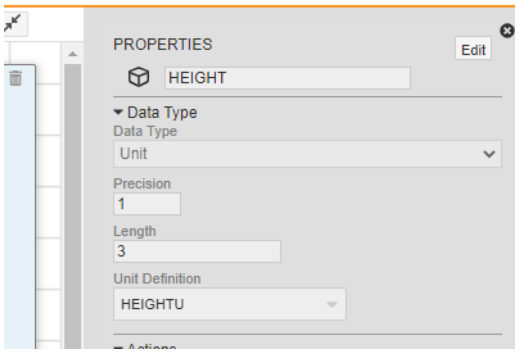
```
16                "itemgroup_sequence": 1,
17                "item_name": "MHTERM",
18                "value": "Headaches",
19                "change_reason": "This is a custom reason for field value"
20            }
21        ]
```

.. is shown in the UI reason in the audit trail:

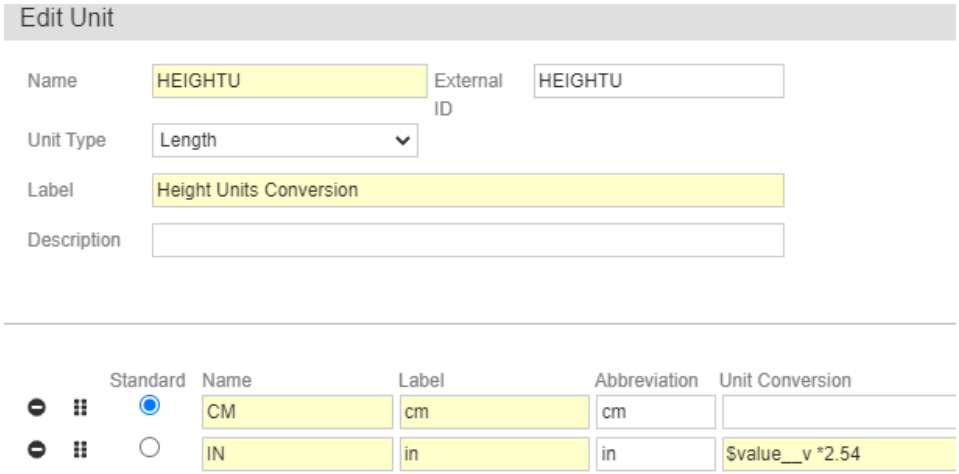


Next, consider the Vitals form, with unit codelist fields for Height, Weight, others:

The Height field definition:



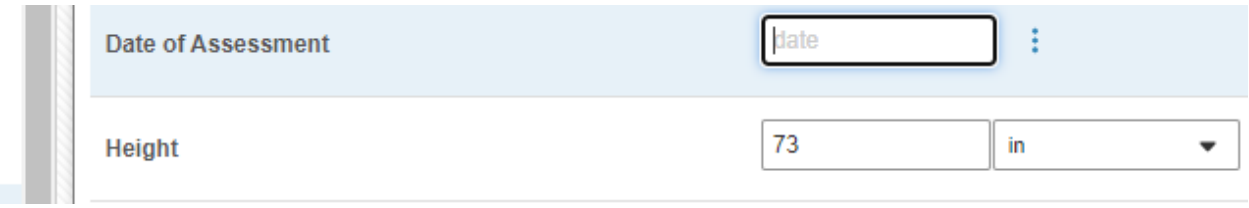
.. with unit codelist HEIGHTU definition prescribing codes of only **CM** and **IN**:



The API body to update the Height field, then, to set 73 Inches is:

```
{
    "study_name": "CSM Demo Study_DEV1",
    "forms": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "form_name": "VS",
            "form_sequence": 1,
            "items": [
                {
                    "itemgroup_name": "VS",
                    "itemgroup_sequence": 1,
                    "item_name": "HEIGHT",
                    "value": "73",
                    "unit_value": "IN"
                }
            ]
        }
```

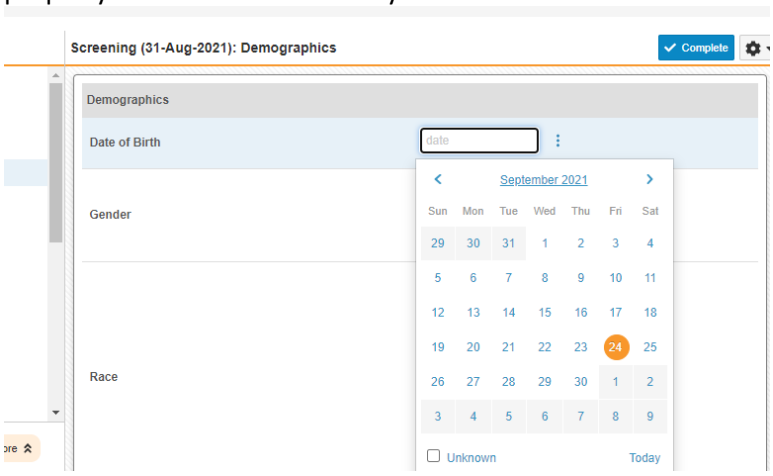
Yielding the EDC UI set as:



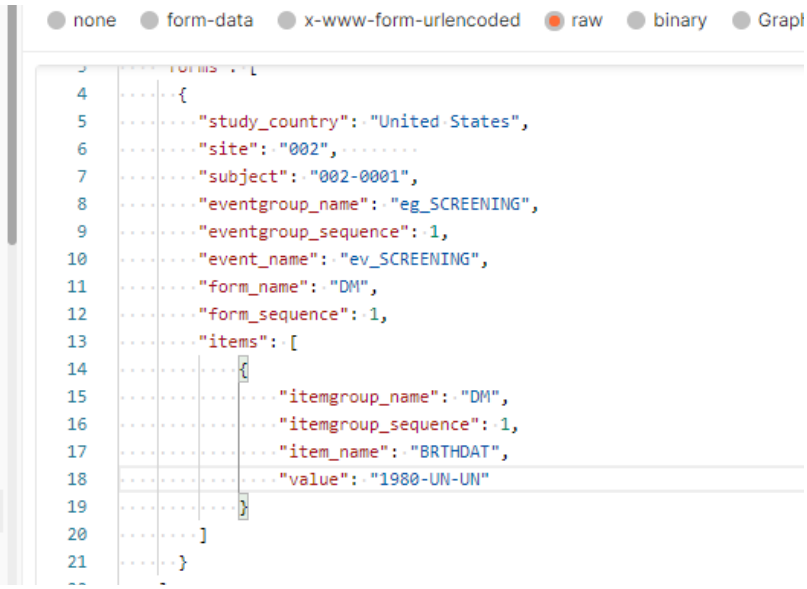
Although the definition of the field is 3 places for the whole number portion, and 1 for decimal, it is not required to enter '73.0' through the API. Attempting 73.12, though, violates the design of this field, and is met with this on attempt:

```
{
    "responseStatus": "SUCCESS",
    "items": [
        {
            "responseStatus": "FAILURE",
            "errorMessage": "This field only accepts 3 digit(s) before the decimal and 1 digit(s) after the decimal.",
            "study_country": "United States",
            "site": "002",
```

Next in consideration is fields that allow for unknown parts (dates / datetimes). The Date of Birth field is set with the property for both month and day:

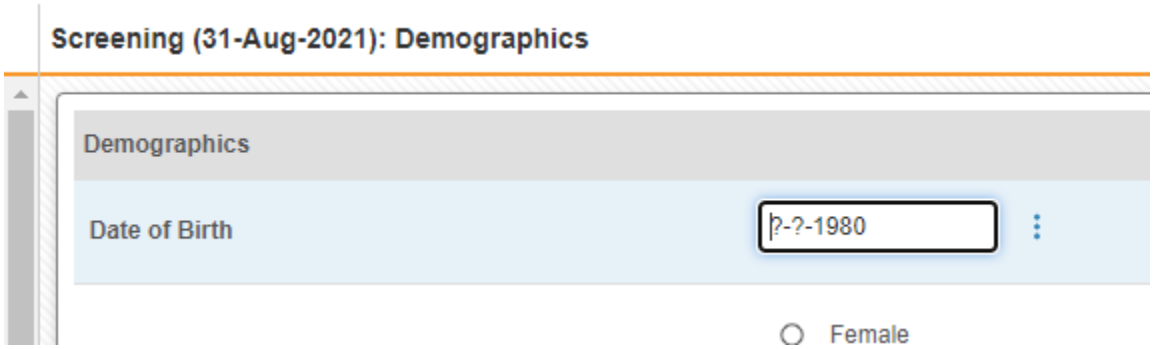


The API body to set an unknown value for both Month and Day: (**UN** is used in each of the portions)

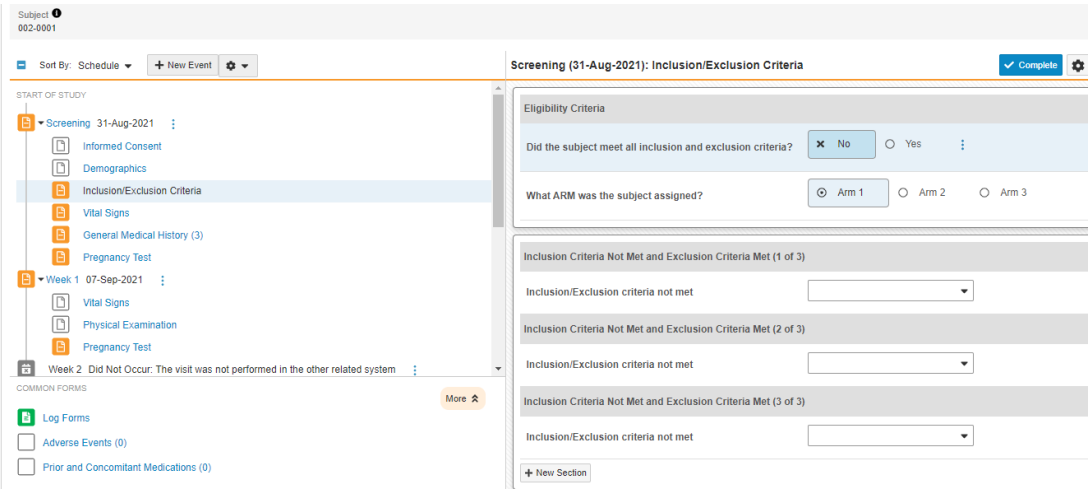



```
{
    "study_country": "United States",
    "site": "002",
    "subject": "002-0001",
    "eventgroup_name": "eg_SCREENING",
    "eventgroup_sequence": 1,
    "event_name": "ev_SCREENING",
    "form_name": "DM",
    "form_sequence": 1,
    "items": [
        {
            "itemgroup_name": "DM",
            "itemgroup_sequence": 1,
            "item_name": "BRTHDAT",
            "value": "1980-UN-UN"
        }
    ]
}
```

.. which yields in EDC the UI formatted value of **?** in the unknown parts. (**?** Is NOT used in the API call)



Next in consideration is forms with repeating item groups. This form in the example study has a non-repeating item group of summary information, then a repeating item group for criteria not met:

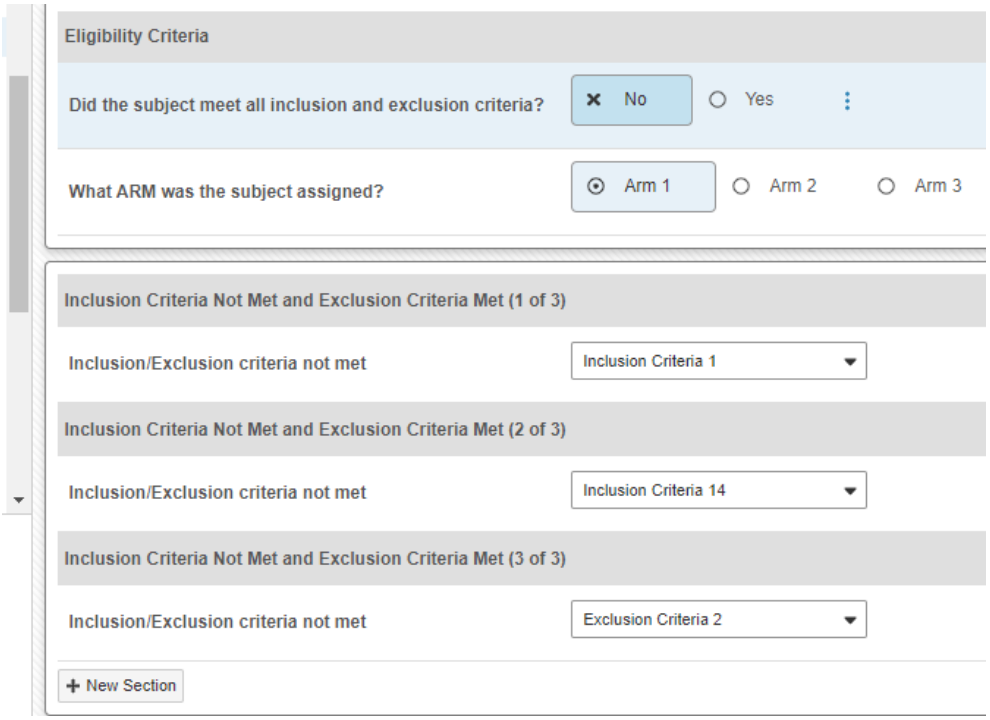


The pictured form has 3 item groups added, which can be done in separate API calls (see Add Item Groups or Upsert Item Groups sections). **Alternatively**, the Upsert Form Data (**PUT** used) will **automatically** run the upsert of item groups, adding any that are necessary for the data update.

This API body uses codelist codes for values, and identifies the item group by sequence for each value:

```
4       {
5           "study_country": "United States",
6           "site": "002",
7           "subject": "002-0001",
8           "eventgroup_name": "eg_SCREENING",
9           "eventgroup_sequence": 1,
10          "event_name": "ev_SCREENING",
11          "form_name": "IE",
12          "form_sequence": 1,
13          "items": [
14              {
15                  "itemgroup_name": "IECAT",
16                  "itemgroup_sequence": 1,
17                  "item_name": "IETESTCD1",
18                  "value": "INC1"
19              },
20              {
21                  "itemgroup_name": "IECAT",
22                  "itemgroup_sequence": 2,
23                  "item_name": "IETESTCD1",
24                  "value": "INC14"
25              },
26              {
27                  "itemgroup_name": "IECAT",
28                  "itemgroup_sequence": 3,
29                  "item_name": "IETESTCD1",
30                  "value": "EXC2"
31              }
32          ]
33      }
34  ]
```

.. which yields the EDC UI result:


Eligibility Criteria
Did the subject meet all inclusion and exclusion criteria?
No
Yes
What ARM was the subject assigned?
Arm 1
Arm 2
Arm 3
Inclusion Criteria Not Met and Exclusion Criteria Met (1 of 3)
Inclusion/Exclusion criteria not met
Inclusion Criteria 1
Inclusion Criteria Not Met and Exclusion Criteria Met (2 of 3)
Inclusion/Exclusion criteria not met
Inclusion Criteria 14
Inclusion Criteria Not Met and Exclusion Criteria Met (3 of 3)
Inclusion/Exclusion criteria not met
Exclusion Criteria 2
New Section

9.8 Submit Forms

Help Main	https://developer-cdms.veevavault.com/api/23.2/#submit-forms **NOTE:** If using this endpoint as part of a sequence to get form data updated, consider using the combination API (new at 23r1) - 9.9 Combination API - Upsert Form Data. The single endpoint will handle several in one call, and conditionally do any necessary actions without having to first inspect the existing state to perform the 'next' of the sequence of API calls. It includes add of repeating form (if not present), opening of the form (if submitted), adding of any necessary item groups (not already there), set of the item data, and optional submit of the form when finished.
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/forms/actions/submit
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	forms	Required	Name of the study country (of the subject's site)
site	forms	Required	Name/number of the site
subject	forms	Required	Subject to act on
eventgroup_name	forms	Required	Design **name** in the study of the event group
eventgroup_sequence	forms	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	forms	Required	Design **name** in the study of the event
form_name	forms	Required	Design **name** in the study of the form to add
form_sequence	forms	Required	The specific sequence to submit

Notes

- The action is for submitting a form, the equal of clicking Complete in the UI
- The limit for actions in one request is **100**.
- This action is important in that it will run all study design rules of that form, which can/might include dynamic add of other events/forms in the study.

Examples

Description / Request (URL)	Response
Submit of one form	
{ "study_name": "ABCP-2022-01_DEV1", "forms": [{ "site": "101", "study_country": "United States", "subject": "SCR-0002", "eventgroup_name": "egSCR",	{ "responseStatus": "SUCCESS", "forms": [{ "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0002",

Description / Request (URL)	Response
"event_name": "evSCR", "form_name": "IE" }] }	"eventgroup_name": "egSCR", "eventgroup_sequence": 1, "event_name": "evSCR", "event_sequence": 1, "form_name": "IE", "form_sequence": 1 }] }
Submit of specific repeating form	

{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"site": "101",
"study_country": "United States",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE",
"form_sequence": 3
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 3
	}
	]
	}

Multiple attempted, one succeeds, one fails	
{ "study_name": "ABCP-2022-01_DEV1", "forms": [{ "site": "101", "study_country": "United States", "subject": "SCR-0002", "eventgroup_name": "LOGS", "event_name": "LOGS", "form_name": "AE", "form_sequence": 3 }, { "site": "101", "study_country": "United States", "subject": "SCR-0002", "eventgroup_name": "LOGS", "event_name": "LOGS",	{ "responseStatus": "SUCCESS", "forms": [{ "responseStatus": "SUCCESS", "study_country": "United States", "site": "101", "subject": "SCR-0002", "eventgroup_name": "LOGS", "eventgroup_sequence": 1, "event_name": "LOGS", "event_sequence": 1, "form_name": "AE", "form_sequence": 3 }, { "responseStatus": "FAILURE", "errorMessage": "Form is submitted",

Description / Request (URL)	Response
"form_name": "AE", "form_sequence": 4 }] }	"study_country": "United States", "site": "101", "subject": "SCR-0002", "eventgroup_name": "LOGS", "eventgroup_sequence": 1, "event_name": "LOGS", "event_sequence": 1, "form_name": "AE", "form_sequence": 4 }] }

Flow Based Examples

For an unsubmitted form the EDC UI:

The post to submit the form will run study design rules (potentially adding dynamic events/forms elsewhere in the study). The Inclusion / Exclusion is submitted with:

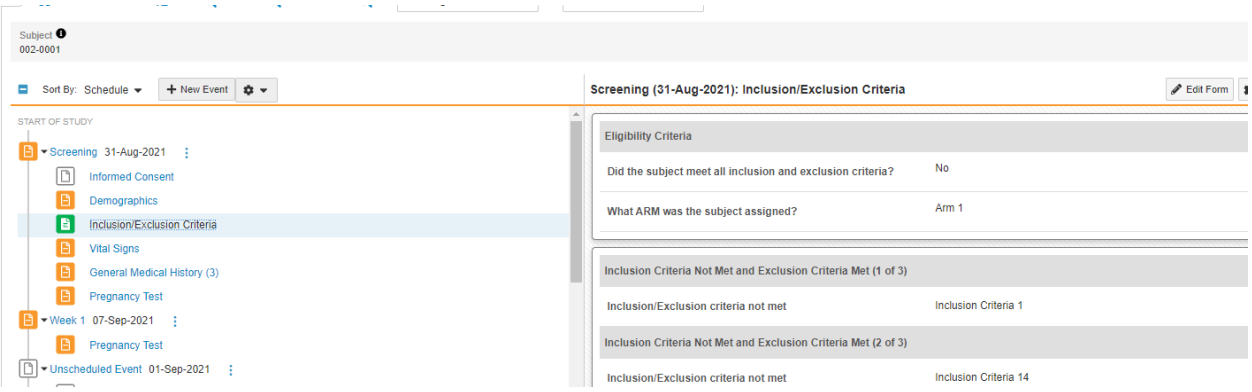
```
{
    "study_name": "CSM Demo Study_DEV1",
    "forms": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "form_name": "IE",
            "form_sequence": 1
        }
    ]
}
```

Body Cookies Headers (16) Test Results Status: 200 OK Ti

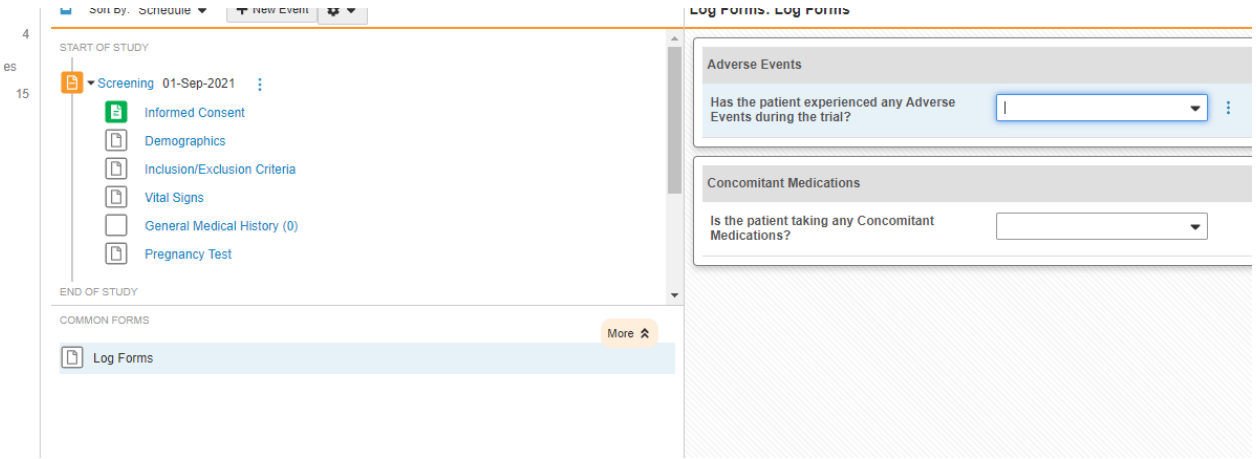
Pretty Raw Preview Visualize JSON

```
{
    "responseStatus": "SUCCESS",
    "forms": [
        {
            "responseStatus": "SUCCESS",
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "event_sequence": 1,
            "form_name": "IE",
            "form_sequence": 1
```

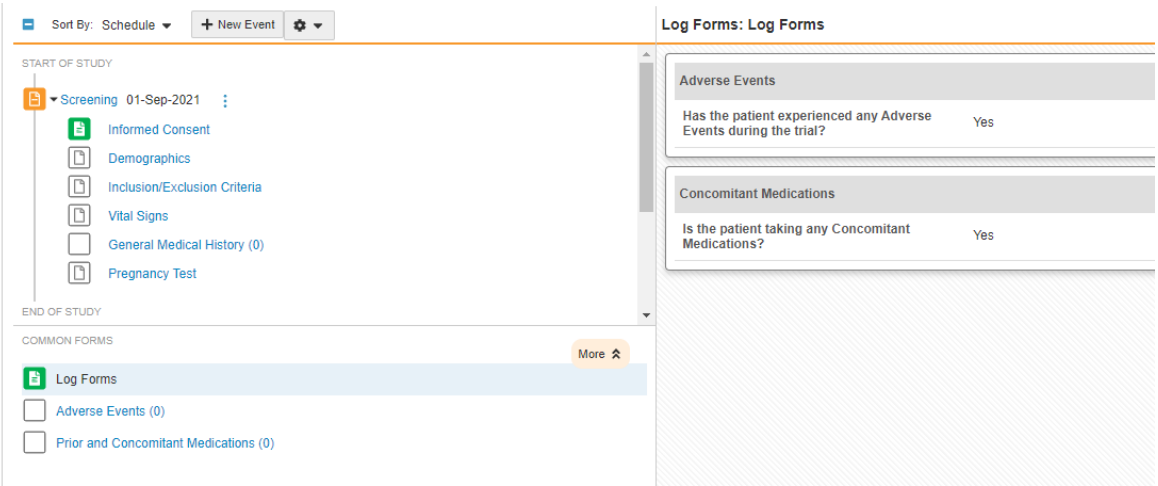
.. yielding the form in EDC UI:



IMPORTANT: When forms appear dynamically, based on answers of other forms, those forms must be submitted to run the rules that drive the appearance of the form. This example in EDC:



.. means the Adverse Events or Prior and Concomitant Medication forms (of this study design) are not available for Add Form (repeating form) or Set Form Data **yet**. Only on using the endpoint to set data to the Log Forms questions above, then submit of that form will yield the AE and CM form areas:



9.9 Reopen Submitted Forms

Help Main	https://developer-cdms.veevavault.com/api/23.2/#reopen-submitted-forms **NOTE:** If using this endpoint as part of a sequence to get form data updated, consider using the combination API (new at 23r1) - 9.9 Combination API - Upsert Form Data. The single endpoint will handle several in one call, and conditionally do any necessary actions without having to first inspect the existing state to perform the 'next' of the sequence of API calls. It includes add of repeating form (if not present), opening of the form (if submitted), adding of any necessary item groups (not already there), set of the item data, and optional submit of the form when finished.
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/forms/actions/edit
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	forms	Required	Name of the study country (of the subject's site)
site	forms	Required	Name/number of the site
subject	forms	Required	Subject to act on
eventgroup_name	forms	Required	Design **name** in the study of the event group
eventgroup_sequence	forms	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	forms	Required	Design **name** in the study of the event
form_name	forms	Required	Design **name** in the study of the form to add
form_sequence	forms	Optional	The specific sequence to open. 1 assumed if omitted
change_reason	forms	Required	The reason to be applied as part of opening the form for edit

Notes

- The action is for opening a form back up, i.e., to further edit data on the form.
- The limit for actions in one request is **100**.
- Currently there is no parameter on the set items (updating a form) to also open the form conditionally for edit (should it be in submitted state). Inspection of the current state of the form is suggested. A coming release will include combination API(s) that do multiple actions, i.e. open a form (if it needs opening), setting data, submitting, as one API call.
- The parameter **change_reason** in the body is required for opening a form and will be added to the audit trail of the form.
- **WARNING:** Any form in **frozen** or **locked** status **cannot** be opened for edit via the API. There is no current API to unfreeze or unlock. These actions were human based decisions, and CDMS stance is that one should not be able to override that via an API call

Examples

Description / Request (URL)	Response
Open one form for edit	

{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"site": "101",
"study_country": "United States",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE",
"form_sequence": 3,
"change_reason": "my reason for open form"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 3
	}
	]
	}

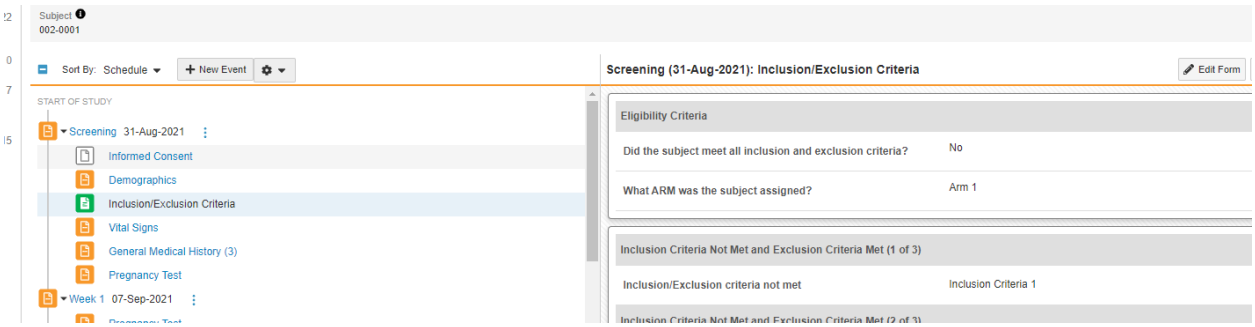
Example 2	

{
"study_name": "ABCP-2022-01_DEV1",
"forms": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE",
"form_sequence": 3,
"change_reason": "my reason for open form"
},
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "LOGS",
"event_name": "LOGS",
"form_name": "AE",
"form_sequence": 4,
"change_reason": "my reason for open form"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"forms": [
	{
	"responseStatus": "SUCCESS",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 3
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Form is not submitted",
	"site": "101",
	"study_country": "United States",
	"subject": "SCR-0002",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,

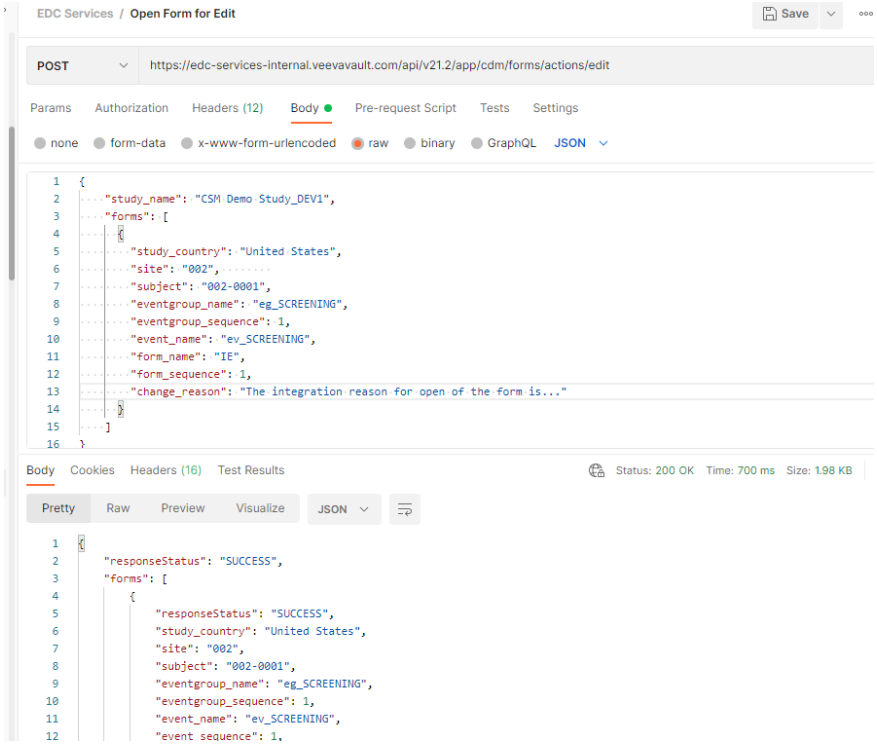
Description / Request (URL)	Response
	"form_name": "AE", "form_sequence": 4 }] }

Flow Based Example

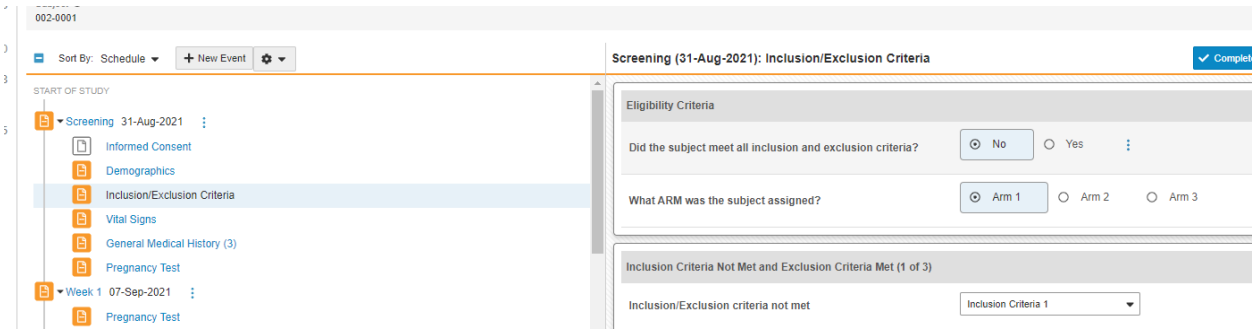
For the currently submitted form in EDC:

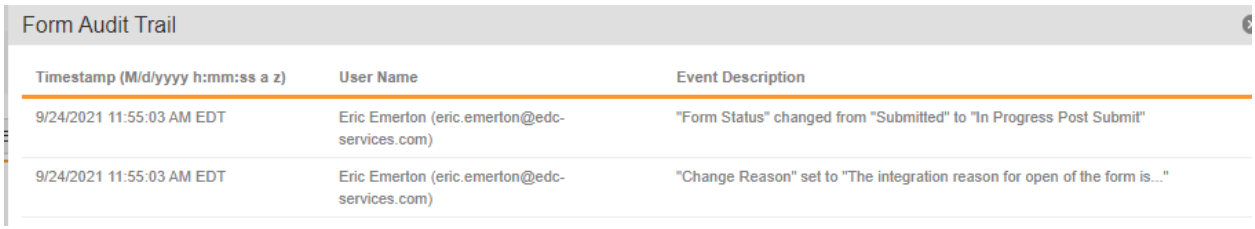


The API post:



.. opens the form in the EDC UI, with the reason provided in the audit trail at the form level:





Form Audit Trail

Timestamp (M/d/yyyy h:mm:ss a z)	User Name	Event Description
9/24/2021 11:55:03 AM EDT	Eric Emerton (eric.emerton@edc-services.com)	"Form Status" changed from "Submitted" to "In Progress Post Submit"
9/24/2021 11:55:03 AM EDT	Eric Emerton (eric.emerton@edc-services.com)	"Change Reason" set to "The integration reason for open of the form is..."

10 Queries

10.1 Retrieve Queries - By Filters

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-queries
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
study_country	Required	Name of the study country (of the subject's site)
site	Required	Name/number of the site
subject	Required	Subject to act on
form_name	Optional	Design **name** in the study of form to filter return of queries, i.e. queries that reside on that form only
query_status	Optional	Filter for the current status of the queries. The vault picklist **name** is used - one of: **open__v** **answered__v** **reopened__v** **closed__v**
event_name	Optional	Design **name** in the study of the event to filter to
last_modified_date		Filter to subject's modified since a certain date. Format: yyyy-MM-ddTHH:mm:ssZ
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Use this API to retrieve the existing queries of a study
- Return specific subsets based on various filtering options.
- If filtered by site / subject, the 'level above' must also be included. Example: if filtering by a site, it's study country must also be included
- The return value **manual** is such that **false** = added by the system.
- When the query was added via a specific design rule, the **rule_definition** indicates the name of the rule that originated the query.
- Queries are added at the item or event level. For event level, the form 'down' information is of course omitted
- The return includes a messages array with each comment/message appended to the query. Reading top down in that array also reveals the progression of query status, and by whom
- With known query ID(s) - perhaps stored as the API added queries - use of the **Retrieve Queries - By ID** endpoint is more straightforward.

Examples

Description / Request (URL)	Response
Get of all queries in a study	

.../app/cdm/queries?study_name=ABCP-2022-01_DEV1
 	
Return includes any status, those fired by system (with rule_definition), or added manual, query on an item, query on an event date, etc.
	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 5,
	"total": 5
	},
	"queries": [
	{
	"id": "OPW00000000T001",
	"query_name": "VV-000230",
	"manual": **false**,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IC",
	"form_sequence": 1,
	"itemgroup_name": "ig-IC2",
	"itemgroup_sequence": 1,
	"item_name": "RFICDAT",
	"rule_definition": "IC_001",
	"created_date": "2022-05-23T17:38:15Z",
	"created_by": "System",
	"messages": [
	{
	"id": "OPY00000000U001",
	"activity": "open__v",
	"message": "Informed consent date is not equal to screening visit date. Please review.",
	"message_date": "2022-05-23T17:38:15Z",
	"message_by": "System"
	}
	]
	},
	{
	"id": "OPW00000000U001",
	"query_name": "VV-000231",
	"manual": **true**,

Description / Request (URL)	Response

	"query_status": "closed__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"created_date": "2022-06-08T20:05:21Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY00000000V001",
	"activity": "open__v",
	"message": "Here is query at the event level",
	"message_date": "2022-06-08T20:05:22Z",
	"message_by": "Eric Emerton"
	},
	{
	"id": "OPY00000000V004",
	"activity": "closed__v",
	"message": null,
	"message_date": "2022-06-08T21:22:34Z",
	"message_by": "Eric Emerton"
	}
	]
	},
	{
	"id": "OPW00000000U002",
	"query_name": "VV-000232",
	"manual": true,
	"query_status": "closed__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "Vital-Signs",
	"form_sequence": 1,
	"itemgroup_name": "ig-VS",
	"itemgroup_sequence": 1,
	"item_name": "VSDAT",
	"created_date": "2022-06-08T20:05:39Z",
	"created_by": "Eric Emerton",
	"messages": [
	{

Description / Request (URL)	Response

	"id": "OPY00000000V002",
	"activity": "open__v",
	"message": "This is my query on a form not visited yet, blank",
	"message_date": "2022-06-08T20:05:39Z",
	"message_by": "Eric Emerton"
	},
	{
	"id": "OPY00000000V003",
	"activity": "closed__v",
	"message": "This is my reason for closing this query",
	"message_date": "2022-06-08T20:06:30Z",
	"message_by": "Eric Emerton"
	}
	]
	},
	{
	"id": "OPW00000000V001",
	"query_name": "VV-000233",
	"manual": true,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 2,
	"itemgroup_name": "ig-AE",
	"itemgroup_sequence": 1,
	"item_name": "AETERM",
	"created_date": "2022-06-08T20:09:48Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY00000000W001",
	"activity": "open__v",
	"message": "Please check this value, this is a query from coding add via API",
	"message_date": "2022-06-08T20:09:48Z",
	"message_by": "Eric Emerton"
	},
	{
	"id": "OPY00000000X001",
	"activity": "open__v",
	"message": "Please check this value, this is a query from

Description / Request (URL)	Response

	coding add via API (2nd add)",
	"message_date": "2022-06-08T20:54:33Z",
	"message_by": "Eric Emerton"
	}
	]
	},
	{
	"id": "OPW00000000W001",
	"query_name": "VV-000234",
	"manual": true,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "Concomitant-Medication",
	"form_sequence": 1,
	"itemgroup_name": "ig-CM",
	"itemgroup_sequence": 1,
	"item_name": "CMTRT",
	"created_date": "2022-06-08T20:57:31Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY00000000X002",
	"activity": "open__v",
	"message": "Please check this value, this is a query from coding add via API (3rd add to CM)",
	"message_date": "2022-06-08T20:57:31Z",
	"message_by": "Eric Emerton"
	}
	]
	}
	]
	}

Filter to just those in Open status	
.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&query_status=open__v	(Like above, but to the queries where a touch of the query.. OR message exists, >= the parameter passed)
Filter to a specific point in time	
.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&last_modified_date=2022-06-01T12:30:00Z	(Like above, but to the queries where a touch of the query.. OR message exists, >= the parameter passed)

Description / Request (URL)	Response
Filter to queries from a specific form design name	
.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&form_name=AE	(Like above, but to the filter)
Filter to a specific subject	
.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&study_country=United States&site=101&subject=SCR-0002	(Like above, but to the filter)
Filter to a specific country	
.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&study_country=United States	(Like above, but to the filter)

10.2 Retrieve Queries - By ID(s)

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-queries-by-id
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries
Parameters	<table><tr><th>Name</th><th>Req/Opt</th><th>Notes</th></tr><tr><td>study_name</td><td>Required</td><td>Name of the study</td></tr><tr><td>id</td><td>Required</td><td>The vault ID(s) of the queries to return. Multiple can be delimited by a comma</td></tr><tr><td>limit</td><td>Optional</td><td>Pagination API - different limit from the default 1000 can be used</td></tr><tr><td>offset</td><td>Optional</td><td>Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd</td></tr></table> **NOTE**: Additional filtering / retrieval of queries is discussed in other sections (By Filters or By Medical Coding Definition)
Notes	• Use this API to retrieve the existing queries of a specific ID (or IDs). The ID of the query is returned on add via the API, or from previous usage of **Retrieve Queries - By Filters** endpoint. • The return value **manual** is such that **false** = added by the system. • When the query was added via a specific design rule, the **rule_definition** indicates the name of the rule that originated the query. • Queries are added at the item or event level. For event level, the form 'down' information is of course omitted • The return includes a messages array with each comment/message appended to the query. Reading top down in that array also reveals the progression of query status, and by whom

Examples

Description / Request (URL)	Response
Single Query (where found)	

.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&id=OPW00000000T001	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"queries": [
	{
	"id": "OPW00000000T001",
	"query_name": "VV-000230",
	"manual": **false**,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IC",
	"form_sequence": 1,
	"itemgroup_name": "ig-IC2",
	"itemgroup_sequence": 1,
	"item_name": "RFICDAT",
	"rule_definition": "IC_001",
	"created_date": "2022-05-23T17:38:15Z",
	"created_by": "System",
	"messages": [
	{
	"id": "OPY00000000U001",
	"activity": "open__v",
	"message": "Informed consent date is not equal to screening visit date. Please review.",
	"message_date": "2022-05-23T17:38:15Z",
	"message_by": "System"
	}
	]
	}
	]
	}

Description / Request (URL)	Response
Attempt where ID not found	

.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&id=OPW00000000T011	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 0,
	"total": 0
	},
	"queries": []
	}

Multiple Queries	

.../app/cdm/queries?study_name=ABCP-2022-01_DEV1&id=OPW00000000T001,OPW00000000T002	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 2,
	"total": 2
	},
	"queries": [
	{
	"id": "OPW00000000T001",
	"query_name": "VV-000230",
	"manual": **false**,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IC",
	"form_sequence": 1,
	"itemgroup_name": "ig-IC2",
	"itemgroup_sequence": 1,
	"item_name": "RFICDAT",
	"rule_definition": "IC_001",
	"created_date": "2022-05-23T17:38:15Z",
	"created_by": "System",
	"messages": [
	{
	"id": "OPY00000000U001",
	"activity": "open__v",
	"message": "Informed consent date is not equal to screening

Description / Request (URL)	Response

	visit date. Please review.",
	"message_date": "2022-05-23T17:38:15Z",
	"message_by": "System"
	}
	]
	},
	{
	"id": "OPW00000000U001",
	"query_name": "VV-000231",
	"manual": true,
	"query_status": "closed__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0006",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"created_date": "2022-06-08T20:05:21Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY00000000V001",
	"activity": "open__v",
	"message": "Here is query at the event level",
	"message_date": "2022-06-08T20:05:22Z",
	"message_by": "Eric Emerton"
	},
	{
	"id": "OPY00000000V004",
	"activity": "closed__v",
	"message": null,
	"message_date": "2022-06-08T21:22:34Z",
	"message_by": "Eric Emerton"
	}
	]
	}
	]
	}

10.3 Retrieve Queries - By Medical Coding Definition

This section is grouped into the Medical Coding chapter, specifically the **Retrieve Coding Queries** section, later in the document.

10.4 Open Queries - By Study Context

Help Main	https://developer-cdms.veevavault.com/api/23.2/#open-query
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	queries	Required	Name of the study country (of the subject's site)
site	queries	Required	Name/number of the site
subject	queries	Required	Subject to act on
eventgroup_name	queries	Required	Design **name** in the study of the event group
eventgroup_sequence	queries	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	queries	Required	Design **name** in the study of the event
form_name	queries	Optional *	Design **name** in the study of the form. **Required** when adding query to an item on a form
form_sequence	queries	Optional *	The specific sequence of the form. (if a query on an item of a form) 1 assumed if omitted.
itemgroup_name	queries	Optional *	Design **name** in the study of the item group location. **Required** when adding query to an item on a form
itemgroup_sequence	queries	Optional *	The specific item group sequence where the item resides (if adding query to an item. 1 assumed if omitted
item_name	queries	Optional *	Design **name** in the study of the item to have query set to (if an item level query)
message	queries	Required	The message of the query on add (255 character limit)

Notes

- The action is used to add a **new** query to an item on a form, or event, of a subject
- The limit for actions in one request is **100**.
- **WARNING:** A locked form will not allow the add a new query, just at the EDC UI would disallow. Frozen forms will accept new queries added via the API.
- For further manipulation of queries (answer, close, re-open), it's good practice to inspect the return on query API actions, for the **id** value. Later actions are simpler, API wise, by using the Query ID.
- The API user's role must have permission to add queries.
- Additional abilities to open queries are available at:
  - **Open Queries - By Item ID** (different style of response)
  - **Open Queries - By Event ID** (different style of response)
  - **Open Coding Queries**

Examples

Description / Request (URL)	Response
Add one query, to an item inside a repeating event group	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "egUNS",
"eventgroup_sequence": 2,
"event_name": "evUNS",
"form_name": "VS",
"form_sequence": 1,
"itemgroup_name": "ig-VS",
"itemgroup_sequence": 1,
"item_name": "VSDAT",
"message": "This is my query from API on an item"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPW00000000X003",
	"query_name": "VV-000237",
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "egUNS",
	"eventgroup_sequence": 2,
	"event_name": "evUNS",
	"event_sequence": 1,
	"form_name": "VS",
	"form_sequence": 1,
	"itemgroup_name": "ig-VS",
	"itemgroup_sequence": 1,
	"item_name": "VSDAT"
	}
	]
	}

Add multiple, non-repeating areas (omit sequences)	
{ "study_name": "ABCP-2022-01_DEV1", "queries": [{ "study_country": "United States", "site": "101", "subject": "SCR-0003", "eventgroup_name": "egSCR", "event_name": "evSCR", "form_name": "DM", "itemgroup_name": "ig-DM", "item_name": "BRTHDAT", "message": "This is my query from API on an item - on DOB of Demography" }, { "study_country": "United States", "site": "101", "subject": "SCR-0003",	{ "responseStatus": "SUCCESS", "queries": [{ "responseStatus": "SUCCESS", "id": "OPW00000000Y001", "query_name": "VV-000238", "query_status": "open__v", "study_country": "United States", "site": "101", "subject": "SCR-0003", "eventgroup_name": "egSCR", "eventgroup_sequence": 1, "event_name": "evSCR", "event_sequence": 1, "form_name": "DM", "form_sequence": 1, "itemgroup_name": "ig-DM", "itemgroup_sequence": 1,

Description / Request (URL)	Response

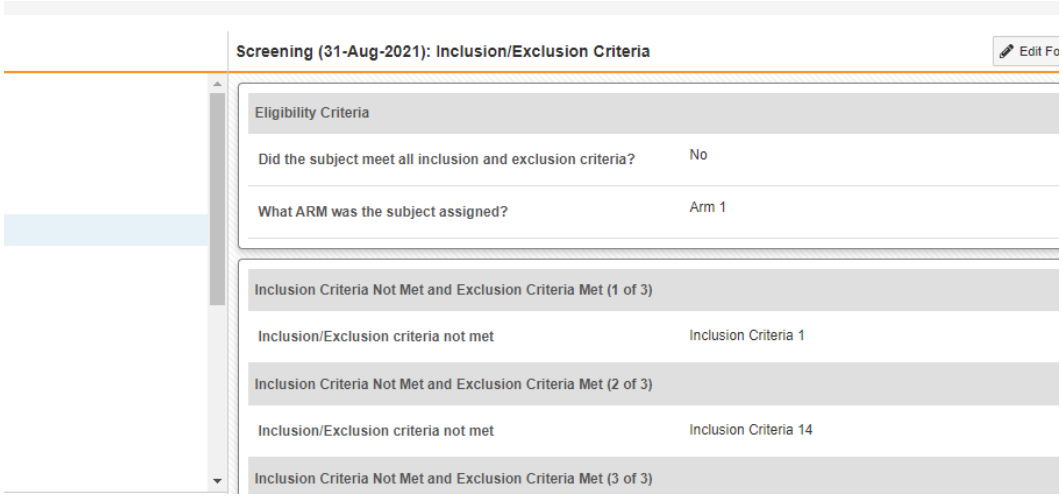
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"form_name": "VS",
"itemgroup_name": "ig-VS",
"item_name": "HEIGHT",
"message": "This is my query from API on an item - on Height of Vitals"
}
]
}
	"item_name": "BRTHDAT"
	},
	{
	"responseStatus": "SUCCESS",
	"id": "OPW00000000Y002",
	"query_name": "VV-000239",
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "VS",
	"form_sequence": 1,
	"itemgroup_name": "ig-VS",
	"itemgroup_sequence": 1,
	"item_name": "HEIGHT"
	}
	]
	}

Query add to an event	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "egSCR",
"event_name": "evSCR",
"message": "This is my query on the screening event"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPW00000000Y004",
	"query_name": "VV-000241",
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1
	}
	]
	}

Flow Based Examples

For the EDC form Inclusion/Exclusion of the example study:



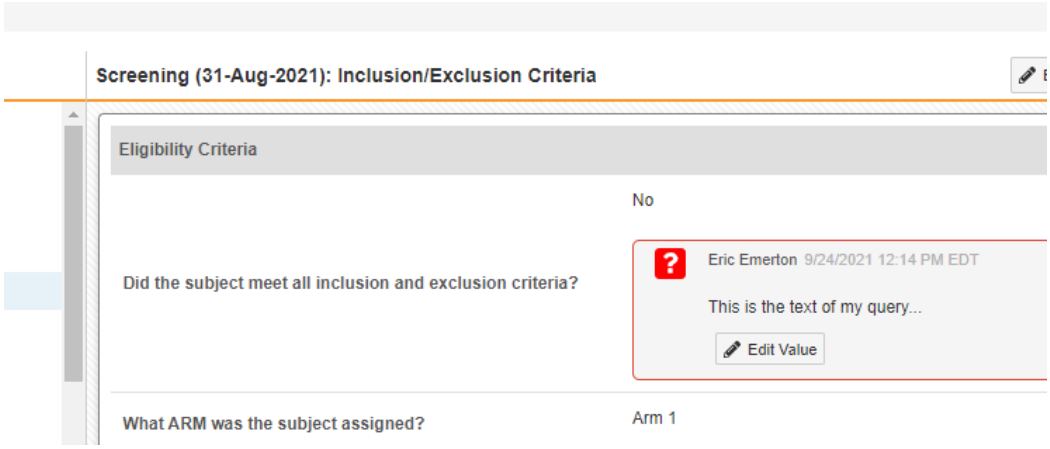
The post of a new query on the first field of the form is below. Note the full path from **event_group_name** through the **item_name**, including **all** sequences at each level.

```
{
    "study_name": "CSM Demo Study_DEV1",
    "queries": [
        {
            "study_country": "United States",
            "site": "002",
            "subject": "002-0001",
            "eventgroup_name": "eg_SCREENING",
            "eventgroup_sequence": 1,
            "event_name": "ev_SCREENING",
            "form_name": "IE",
            "form_sequence": 1,
            "itemgroup_name": "IEEL",
            "itemgroup_sequence": 1,
            "item_name": "IEYN1" ,
            "message": "This is the text of my query..."
        }
    ]
```

.. yields the return with **id** and **query_name** values, plus **query_status**:

```
{
    "responseStatus": "SUCCESS",
    "queries": [
        {
            "responseStatus": "SUCCESS",
            "id": "OPW000000042001",
            "query_name": "VV-002811",
            "query_status": "open__v",
            "study_country": "United States",
            "site": "002",
```


The result in the EDC UI:



For adding a query at the event level, the post only needs go through the event name:

Params Authorization Headers (12) Body Pre-request Script Tests Settings

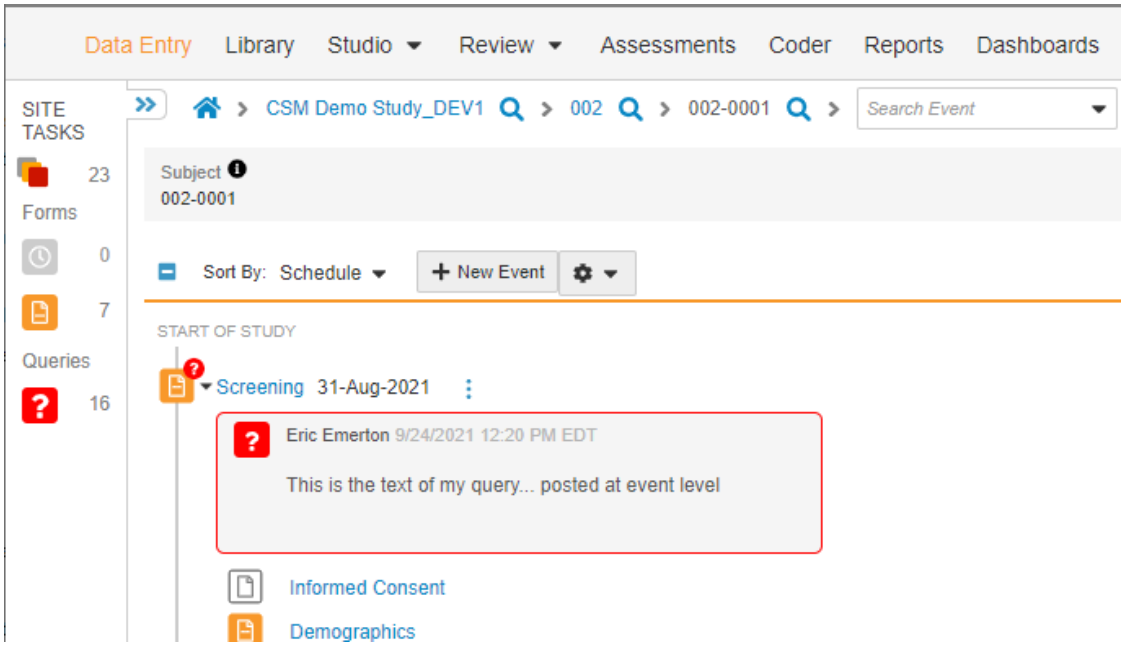
none form-data x-www-form-urlencoded raw binary GraphQL JSON


```
2    "study_name": "CSM Demo Study_DEV1",
3    "queries": [
4        {
5            "study_country": "United States",
6            "site": "002",
7            "subject": "002-0001",
8            "eventgroup_name": "eg_SCREENING",
9            "eventgroup_sequence": 1,
10           "event_name": "ev_SCREENING",
11           "message": "This is the text of my query... posted at event level"
12       }
13   ]
14 }
```


Body Cookies Headers (16) Test Results Status: 200 OK Time: 1111 ms Si

Pretty Raw Preview Visualize JSON


```
1  {
2      "responseStatus": "SUCCESS",
3      "queries": [
4          {
5              "responseStatus": "SUCCESS",
6              "id": "OPW000000041002",
7              "query_name": "VV-002812",
8              "query_status": "open__v",
9              "study_country": "United States",
10             "site": "002",
11             "subject": "002-0001",
12             "eventgroup_name": "eg_SCREENING",
13             "eventgroup_sequence": 1,
14             "event_name": "ev_SCREENING",
15             "event_sequence": 1
```

10.5 Open Queries - By Item ID

Help Main	https://developer-cdms.veevavault.com/api/23.2/#open-query-by-item-id
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/items/actions/openquery
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
manual		Optional	Boolean - use only true/false. When omitted, **true** is used. In this context, manual = **false**, or 'System' classified would imply not added by an end user in the UI, instead 'a system' (even though not the CDMS system, the way study rules are added by 'system'). All queries in the body are given the same manual property value on add.
id	queries	Required	The ID of the item where the query is to be added.
message	queries	Required	The message of the query on add (255 character limit)

Notes

- The action is used to add a **new** query to an item, but using the Vault ID for the item where the query is added. This endpoint is only know if the Item's ID is known (obtained through exports, other endpoints that expose the ID)
- The limit for actions in one request is **500.**
- This endpoint returns slightly different response information from the **Open Queries - By Study Context** endpoint. It does not include the event / form level design information, i.e. presuming the caller of the endpoint already knows all that. It does, though, return messages (the first one, with its own message ID) and other information similar to the return of **Retrieve Queries - By Filters**
- **WARNING:** A locked form will not allow the add a new query, just at the EDC UI would disallow. Frozen forms will accept new queries added via the API.
- Additional abilities to open queries are available at:
  - **Open Queries - By Study Context** (different style of response)
  - **Open Queries - By Event ID**
  - **Open Coding Queries** (different style of response)

Examples

Description / Request (URL)	Response
Attempt add of two, one fails, one succeeds	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"id": "V5D00000000K011",
"message": ""
},
{
"id": "V5D00000000K012",
"message": "Open query on item from open by item ID"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	{
	"responseStatus": "FAILURE",
	"errorMessage": "Message is required",
	"item_id": "V5D00000000K011"
	},
	{
	"responseStatus": "SUCCESS",
	"id": "OPW000000011001",
	"query_status": "open__v",
	"item_id": "V5D00000000K012",
	"query_name": "VV-000246",
	"created_date": "2022-06-16T14:52:03Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY000000012001",
	"activity": "open__v",
	"message": "Open query on item from open by item ID",
	"message_date": "2022-06-16T14:52:04Z",
	"message_by": "Eric Emerton"
	}
	]
	}
	]
	}

10.6 Open Queries - By Event ID

Help Main	https://developer-cdms.veevavault.com/api/23.2/#open-query-by-event-id
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/events/actions/openquery
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
manual		Optional	Boolean - use only true/false. When omitted, **true** is used. In this context, manual = **false**, or 'System' classified would imply not added by an end user in the UI, instead 'a system' (even though not the CDMS system, the way study rules are added by 'system'). All queries in the body are given the same manual property value on add.
id	queries	Required	The ID of the event where the query is to be added.
message	queries	Required	The message of the query on add (255 character limit)

Notes

- The action is used to add a **new** query to an item, but using the Vault ID for the event where the query is added. This endpoint is only know if the Event's ID is known (obtained through exports, other endpoints that expose the ID)
- The limit for actions in one request is **500**.
- This endpoint returns slightly different response information from the **Open Queries - By Study Context** endpoint. It does not include the event / form level design information, i.e. presuming the caller of the endpoint already knows all that. It does, though, return messages (the first one, with its own message ID) and other information similar to the return of **Retrieve Queries - By Filters**
- **WARNING:** A locked event will not allow the add a new query, just at the EDC UI would disallow. Frozen events will accept new queries added via the API.
- **WARNING:** For cases where the event **date** (of the event) is locked, but the rest of the event is not,, a query add is also **disallowed**
- Additional abilities to open queries are available at:
  - **Open Queries - By Study Context** (different style of response)
  - **Open Queries - By Item ID**
  - **Open Coding Queries** (different style of response)

Examples

Description / Request (URL)	Response
Attempt add of two, one fails, one succeeds	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"id": "OPS00000001X002",
"message": "Open query on Event from open by event ID - 1st"
},
{
"id": "OPS00000001X001",
"message": "Open query on Event from open by event ID - 2nd"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Event] with id [OPS00000001X002] not found",
	"event_id": "OPS00000001X002"
	},
	{
	"responseStatus": "SUCCESS",
	"id": "OPW000000011001",
	"query_status": "open__v",
	"event_id": "OPS00000001X001",
	"query_name": "VV-000248",
	"created_date": "2022-06-16T15:52:03Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY000000012001",
	"activity": "open__v",
	"message": "Open query on Event from open by event ID - 2nd",
	"message_date": "2022-06-16T15:52:04Z",
	"message_by": "Eric Emerton"
	}
	]
	}
	]
	}

10.7 Answer Queries - By Study Context

Help Main	https://developer-cdms.veevavault.com/api/23.2/#answer-query
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries/actions/answer
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	queries	Required	Name of the study country (of the subject's site)
site	queries	Required	Name/number of the site
subject	queries	Required	Subject to act on
eventgroup_name	queries	Required	Design **name** in the study of the event group
eventgroup_sequence	queries	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	queries	Required	Design **name** in the study of the event
form_name	queries	Optional *	Design **name** in the study of the form. **Required** when query is on an item on a form
form_sequence	queries	Optional *	The specific sequence of the form. (if a query on an item of a form) 1 assumed if omitted.
itemgroup_name	queries	Optional *	Design **name** in the study of the item group location. **Required** when query is an item on a form
itemgroup_sequence	queries	Optional *	The specific item group sequence where the item resides (if a query on an item). 1 assumed if omitted
item_name	queries	Optional *	Design **name** in the study of the item (if a query on an item)
message	queries	Required	The message of the query on answer(255 character limit)

Notes

- The action is used to answer an **existing** query, via the subject information, and study design location.
- The limit for actions in one request is **100**.
- The action applies whether the query is against an item (on a form), or an event.
- The query must be in **Open** status to perform this action
- **WARNING:** In some cases, the answer action will only post a new message/comment to the query, i.e. not move the status to answered. Those that can move to answered status are typically site users only, who lack open query permission, but instead have answer query permission.
- **WARNING:** If multiple queries exist at the item (or event), an error will be returned.
- **WARNING:** A locked form will not allow the editing of a query, just at the EDC UI would disallow. Frozen forms will accept the edit added via the API.
- One can also answer a query by query ID - see the next section **Answer Queries - By Query ID**
- **TIP:** If query IDs are known (returned in **Retrieve Queries**), then use of this option By ID is preferred.

Examples

Description / Request (URL)	Response
Answer of one query	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0002",
"eventgroup_name": "egSCR",
"eventgroup_sequence": 1,
"event_name": "evSCR",
"event_sequence": 1,
"form_name": "IC",
"form_sequence": 1,
"itemgroup_name": "ig-IC2",
"itemgroup_sequence": 1,
"item_name": "RFICDAT",
"message": "This is the text on answer query"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPW00000000T001",
	"query_name": "VV-000230",
	"query_status": "answered__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0002",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IC",
	"form_sequence": 1,
	"itemgroup_name": "ig-IC2",
	"itemgroup_sequence": 1,
	"item_name": "RFICDAT"
	}
	]
	}

10.8 Answer Queries - By Query ID

Help Main	https://developer-cdms.veevavault.com/api/23.2/#answer-query
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries/actions/answer
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
id	queries	Required	The Vault ID of the query. This value is returned on add (if added by API), and also on **Get Queries** endpoint return of the query.
message	queries	Required	The message of the query on answer(255 character limit)

Notes

- The action is used to answer an **existing** query, via the subject information, and known query ID.
- The limit for actions in one request is **100**.
- The action applies whether the query is against an item (on a form), or an event
- The query must be in **Open** status to perform this action
- **WARNING:** In some cases, the answer action will only post a new message/comment to the query, i.e. not move the status to answered. Those that can move to answered status are typically site users only, who lack open query permission, but instead have answer query permission.
- **WARNING:** A locked form will not allow the editing of a query, just at the EDC UI would disallow. Frozen forms will accept the edit added via the API.
- One can also answer a query by subject information / study design also - see the previous section **Answer Queries - By Study Context**
- **TIP:** If query IDs are known (returned in **Retrieve Queries**), then use of this option By ID is preferred.

Examples

Description / Request (URL)	Response
Answer of one query	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "queries": [
        {
            "id": "OPW000000014003",
            "message": "Answered Query via API"
        }
    ]
}
```

```
{
    "responseStatus": "SUCCESS",
    "queries": [
        {
            "responseStatus": "SUCCESS",
            "id": "OPW000000014003",
            "query_name": "VV-000255",
            "query_status": "answered__v",
            "study_country": "United States",
            "site": "101",
            "subject": "SCR-0003",
            "eventgroup_name": "egSCR",
            "eventgroup_sequence": 1,
            "event_name": "evSCR",
```

Description / Request (URL)	Response
	"event_sequence": 1, "form_name": "DM", "form_sequence": 1, "itemgroup_name": "ig-DM", "itemgroup_sequence": 1, "item_name": "SEX" }] }

10.9 Close Queries - By Study Context

Help Main	https://developer-cdms.veevavault.com/api/23.2/#close-query
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries/actions/close
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	queries	Required	Name of the study country (of the subject's site)
site	queries	Required	Name/number of the site
subject	queries	Required	Subject to act on
eventgroup_name	queries	Required	Design **name** in the study of the event group
eventgroup_sequence	queries	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	queries	Required	Design **name** in the study of the event
form_name	queries	Optional *	Design **name** in the study of the form. **Required** when query is on an item on a form
form_sequence	queries	Optional *	The specific sequence of the form. (if a query on an item of a form) 1 assumed if omitted.
itemgroup_name	queries	Optional *	Design **name** in the study of the item group location. **Required** when query is an item on a form
itemgroup_sequence	queries	Optional *	The specific item group sequence where the item resides (if a query on an item). 1 assumed if omitted
item_name	queries	Optional *	Design **name** in the study of the item (if a query on an item)
message	queries	Optional	The message of the query on close, optional (255 character limit)

Notes

- The action is used to close an **existing** query, via the subject information, and study design location.
- The limit for actions in one request is **100**.
- The action applies whether the query is against an item (on a form), or an event
- The query must be in **Answered** status to perform this action
- **WARNING:** If multiple queries exist at the item (or event), an error will be returned.
- **WARNING:** A locked form will not allow the editing of a query, just at the EDC UI would disallow. Frozen forms will accept the edit added via the API.
- One can also close a query by query ID - see the next section **Close Queries - By Query ID**
- **TIP:** If query IDs are known (returned in **Retrieve Queries**), then use of this option By ID is preferred.

Examples

Description / Request (URL)	Response
Close one query (with message)	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "egSCR",
"eventgroup_sequence": 1,
"event_name": "evSCR",
"event_sequence": 1,
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE1",
"itemgroup_sequence": 1,
"item_name": "IEYN",
"message": "This is the text on close query"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPW000000012005",
	"query_name": "VV-000256",
	"query_status": "closed__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE1",
	"itemgroup_sequence": 1,
	"item_name": "IEYN"
	}
	]
	}

10.10 Close Queries - By Query ID

Help Main	https://developer-cdms.veevavault.com/api/23.2/#close-query-batch
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries/actions/closebyid
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
id	queries	Required	The Vault ID of the query. This value is returned on add (if added by API), and also on **Get Queries** endpoint return of the query.
message	queries	Optional	The message of the query on close, optional (255 character limit)

Notes

- The action is used to answer an **existing** query, via known query ID(s).
- The limit for actions in one request is **500**.
- The action applies whether the query is against an item (on a form), or an event
- The query must be in **Answered** status to perform this action
- **WARNING:** A locked form will not allow the editing of a query, just at the EDC UI would disallow. Frozen forms will accept the edit added via the API.
- One can also answer a query by subject information / study design also - see the previous section **Close Queries - By Study Design Context**. The endpoint for study context originally included a 'By ID' style, but that is to be deprecated in favor of this endpoint (../actions/closebyid)
- **TIP:** If query IDs are known (returned in **Retrieve Queries**), then use of this option By ID is preferred.

Examples

Description / Request (URL)	Response
Close of one query (with message)	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "queries": [
        {
            "id": "OPW000000014003",
            "message": "Closed Query via API - by ID"
        }
    ]
}
```

```
{
    "responseStatus": "SUCCESS",
    "queries": [
        {
            "responseStatus": "SUCCESS",
            "id": "OPW000000014003",
            "message": "Closed Query via API - by ID",
            "query_status": "closed__v",
        }
    ]
}
```

10.11 Reopen Queries - By Study Context

Help Main	https://developer-cdms.veevavault.com/api/23.2/#reopen-query
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries/actions/reopen
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
study_country	queries	Required	Name of the study country (of the subject's site)
site	queries	Required	Name/number of the site
subject	queries	Required	Subject to act on
eventgroup_name	queries	Required	Design **name** in the study of the event group
eventgroup_sequence	queries	Optional	The specific sequence of an event group. 1 assumed if omitted
event_name	queries	Required	Design **name** in the study of the event
form_name	queries	Optional *	Design **name** in the study of the form. **Required** when query is on an item on a form
form_sequence	queries	Optional *	The specific sequence of the form. (if a query on an item of a form) 1 assumed if omitted.
itemgroup_name	queries	Optional *	Design **name** in the study of the item group location. **Required** when query is an item on a form
itemgroup_sequence	queries	Optional *	The specific item group sequence where the item resides (if a query on an item). 1 assumed if omitted
item_name	queries	Optional *	Design **name** in the study of the item (if a query on an item)
message	queries	Required	The message of the query on answer(255 character limit)

Notes

- The action is used to reopen an **existing** query, via the subject information, and study design location.
- The limit for actions in one request is **100**.
- The action applies whether the query is against an item (on a form), or an event
- The query must be in **Closed** status to perform this action
- **WARNING:** If multiple queries exist at the item (or event), an error will be returned.
- **WARNING:** A locked form will not allow the editing of a query, just at the EDC UI would disallow. Frozen forms will accept the edit added via the API.
- One can also reopen a query by query ID - see the next section **Reopen Queries - By Query ID**
- **TIP:** If query IDs are known (returned in **Retrieve Queries**), then use of this option By ID is preferred.

Examples

Description / Request (URL)	Response
Reopen of one query	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"study_country": "United States",
"site": "101",
"subject": "SCR-0003",
"eventgroup_name": "egSCR",
"eventgroup_sequence": 1,
"event_name": "evSCR",
"event_sequence": 1,
"form_name": "IE",
"form_sequence": 1,
"itemgroup_name": "ig-IE1",
"itemgroup_sequence": 1,
"item_name": "IEYN",
"message": "This is the text on reopen query"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPW000000012005",
	"query_name": "VV-000256",
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0003",
	"eventgroup_name": "egSCR",
	"eventgroup_sequence": 1,
	"event_name": "evSCR",
	"event_sequence": 1,
	"form_name": "IE",
	"form_sequence": 1,
	"itemgroup_name": "ig-IE1",
	"itemgroup_sequence": 1,
	"item_name": "IEYN"
	}
	]
	}

10.12 Reopen Queries - By Query ID

Help Main	https://developer-cdms.veevavault.com/api/23.2/#reopen-query
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries/actions/reopen
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
id	queries	Required	The Vault ID of the query. This value is returned on add (if added by API), and also on **Get Queries** endpoint return of the query.
message	queries	Required	The message of the query on reopen (255 character limit)

Notes

- The action is used to reopen an **existing** query, via the subject information, and known query ID.
- The action applies whether the query is against an item (on a form), or an event
- The limit for actions in one request is **100**.
- The query must be in **Closed** status to perform this action
- **WARNING:** A locked form will not allow the editing of a query, just at the EDC UI would disallow. Frozen forms will accept the edit added via the API.
- One can also reopen a query by subject information / study design also - see the previous section **Reopen Queries - By Study Context**
- **TIP:** If query IDs are known (returned in **Retrieve Queries**), then use of this option By ID is preferred.

Examples

Description / Request (URL)	Response
Answer of one query	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "queries": [
        {
            "id": "OPW000000012006",
            "message": "Reopened query via API by ID."
        }
    ]
}
```

```
{
    "responseStatus": "SUCCESS",
    "queries": [
        {
            "responseStatus": "SUCCESS",
            "id": "OPW000000012006",
            "query_name": "VV-000257",
            "query_status": "open__v",
            "study_country": "United States",
            "site": "101",
            "subject": "SCR-0003",
            "eventgroup_name": "egSCR",
            "eventgroup_sequence": 1,
            "event_name": "evSCR",
            "event_sequence": 1,
            "form_name": "IC",
```

Description / Request (URL)	Response
	"form_sequence": 1, "itemgroup_name": "ig-IC2", "itemgroup_sequence": 1, "item_name": "RFICDAT" }] }

11 Medical Coding

11.1 Retrieve Coding Requests

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-coding-requests
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/coder/codingrequests
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
coding_item_definition_id	Required	See the **Study Design -> Retrieve Coding Form Definitions** for retrieving these values. There, the `coding_item_definition_id` is the value to use into this endpoint.
study_country	Optional	Name of the study country (of the subject's site)
site	Optional	Name/number of the site, requires study country (of the site) if using
subject	Optional	Subject number, requires country and site if using
last_modified_date	Optional	Filter to coding requests modified since a certain date. Format: yyyy-MM-ddTHH:mm:ssZ
coding_status	Optional	Retrieve only those requests of certain status (or statuses, if multiple, use comma separated value). Valid status values are - open__v, autocoded__v, uncoded__v, noncurrent__v, coded__v, rejected__v, pending_approval__v, not_to_be_coded__v, better_code_found__v, or updated__v
include_external_suggestions	Optional	Boolean value, whether or not to include any external suggestions to the requests. Default when omitted is `false`. Also note that the study must also be configured with an external suggestion definition to return this information in the response.
has_external_suggestions	Optional	Boolean value, when included, will filter the return to just those requests with external suggestions (true) in place, or not (false). When omitted, there is no filter one way or the other.
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Use this API to retrieve the medical coding requests
- Required is the **coding_item_definition_id**. Only one coding form (its requests) can be returned at once. To get the appropriate value for the study / coding item definition, use the endpoint **Study Design -> Retrieve Coding Form Definitions**. Specifically the response parameter: `coding_item_definition_id`
- Filter for requests modified since a point is done is done with the **last_modified_date** parameter. The format is: yyyy-MM-ddTHH:mm:ssZ

Examples

Description / Request (URL)	Response
All requests of specific definition (MedDRA)	

.../app/cdm/coder/codingrequests?study_name=ABCPharma_DEV1&coding_item_definition_id=V0T000000002001	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 2,
	"total": 2
	},
	"codingrequests": [
	{
	"coding_item_definition_id": "V0T000000002001",
	"form_coding_status": "active__v",
	"form_type": "ae__v",
	"dictionary_definition": "MedDRA",
	"requests": [
	{
	"id": "V0V000000003001",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"verbatim": "My Term 1",
	"start_date": "",
	"stop_date": "",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 1,
	"itemgroup_name": "ig-AE",
	"itemgroup_sequence": 1,
	"item_name": "AETERM",
	"coding_status": "open__v",
	"last_modified_date": "2022-05-23T17:34:46Z",
	"created_date": "2022-05-23T17:34:46Z",
	"created_by": "System",
	"other_properties": {
	"My Label for SAE Form Uploaded": null
	},
	"seriousness": "Yes",
	"severity": "",
	"llt_code": "",
	"llt": "",
	"pt_code": "",

Description / Request (URL)	Response

	"pt": "",
	"hlt_code": "",
	"hlt": "",
	"hlgt_code": "",
	"hlgt": "",
	"soc": "",
	"soc_code": "",
	"primary_path": ""
	},
	{
	"id": "V0V000000003002",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"verbatim": "My AE 2",
	"start_date": "2022-05-01T00:00:00Z",
	"stop_date": "",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 2,
	"itemgroup_name": "ig-AE",
	"itemgroup_sequence": 1,
	"item_name": "AETERM",
	"coding_status": "coded__v",
	"last_coded_date": "2022-06-02T18:35:03Z",
	"last_modified_date": "2022-06-02T18:35:03Z",
	"created_date": "2022-05-23T17:35:27Z",
	"created_by": "System",
	"other_properties": {
	"My Label for SAE Form Uploaded": "true"
	},
	"seriousness": "No",
	"severity": "",
	"llt_code": "10027599",
	"llt": "Migraine",
	"pt_code": "10027599",
	"pt": "Migraine",
	"hlt_code": "10027603",
	"hlt": "Migraine headaches",
	"hlgt_code": "10019231",
	"hlgt": "Headaches",
	"soc": "Nervous system disorders",
	"soc_code": "10029205",
	"primary_path": "Y"
	}

Description / Request (URL)	Response
	] }] }
All requests of specific definition (WHODrug)	

.../app/coder/codingrequests?study_name=ABCPharma_DEV1&coding_item_definition_id=V0T000000004001	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 2,
	"total": 2
	},
	"codingrequests": [
	{
	"coding_item_definition_id": "V0T000000004001",
	"form_coding_status": "active__v",
	"form_type": "cm__v",
	"dictionary_definition": "WHODrug C3",
	"requests": [
	{
	"id": "V0V000000004001",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"verbatim": "Aspirin",
	"start_date": "",
	"stop_date": "",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "CM",
	"form_sequence": 1,
	"itemgroup_name": "ig-CM",
	"itemgroup_sequence": 1,
	"item_name": "CMTRT",
	"coding_status": "coded__v",
	"last_coded_date": "2022-06-02T20:02:26Z",
	"last_modified_date": "2022-06-02T20:02:26Z",
	"created_date": "2022-06-02T20:00:44Z",
	"created_by": "System",
	"other_properties": {},
	"indication": "Headache",
	"route": "Oral",
	"drug_name": "Aspirin",

Description / Request (URL)	Response
	"drug_code": "00002701004", "preferred_code": "00002701001", "preferred_name": "Acetylsalicylic acid", "atc4_code": "N02BA", "atc4": "Salicylic acid and derivatives", "atc3_code": "N02B", "atc3": "OTHER ANALGESICS AND ANTIPYRETICS", "atc2_code": "N02", "atc2": "ANALGESICS", "atc1_code": "N", "atc1": "NERVOUS SYSTEM" }, { "id": "V0V000000004002", "site": "101", "subject": "SCR-0001", "verbatim": "Ibuprofen", "start_date": "", "stop_date": "", "eventgroup_name": "LOGS", "eventgroup_sequence": 1, "event_name": "LOGS", "event_sequence": 1, "form_name": "CM", "form_sequence": 2, "itemgroup_name": "ig-CM", "itemgroup_sequence": 1, "item_name": "CMTRT", "coding_status": "open__v", "last_coded_date": "", "last_modified_date": "2022-06-02T20:01:47Z", "created_date": "2022-06-02T20:01:47Z", "created_by": "System", "other_properties": {}, "indication": "My indication", "route": "Nasal", "drug_name": "", "drug_code": "", "preferred_code": "", "preferred_name": "", "atc4_code": "", "atc4": "", "atc3_code": "", "atc3": "", "atc2_code": "", "atc2": "", "atc1_code": "", "atc1": ""

Description / Request (URL)	Response
	}] }] }
Filter to a specific subject	
.../app/cdm/coder/codingrequests?study_name=ABCPharma_DEV1&coding_item_definition_id=V0T000000004001&study_country=United States&site=101&subject=101-001	(Like above, but to the filter)
Include Suggestions - MedDRA Request, one with suggestions (2), other without any	

.../app/cdm/coder/codingrequests?study_name=ABCPharma_DEV1&coding_item_definition_id=V0T000000004001&include_external_suggestions=**true**	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 2,
	"total": 2
	},
	"codingrequests": [
	{
	"coding_item_definition_id": "V0R00000003K001",
	"form_coding_status": "active__v",
	"form_type": "ae__v",
	"dictionary_definition": "MedDRA",
	"dictionary_release": "MedDRA_25_1",
	"requests": [
	{
	"id": "V0T000000027001",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"verbatim": "Stroke",
	"start_date": "",
	"stop_date": "",
	"eventgroup_name": "egMain",
	"eventgroup_sequence": 1,
	"event_name": "evMIN",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 1,
	"itemgroup_name": "igAE",
	"itemgroup_sequence": 1,

Description / Request (URL)	Response
	"item_name": "AETERM", "coding_status": "autocoded__v", "last_coded_date": "2023-04-24T18:40:48Z", "last_modified_date": "2023-04-24T18:40:48Z", "created_date": "2023-04-24T18:40:46Z", "created_by": "System", "other_properties": {}, "seriousness": "", "severity": "", "soc_code": "10029205", "soc": "Nervous system disorders", "hlgt_code": "10007963", "hlgt": "Central nervous system vascular disorders", "hlt_code": "10007948", "hlt": "Central nervous system haemorrhages and cerebrovascular accidents", "pt_code": "10008190", "pt": "Cerebrovascular accident", "llt_code": "10042244", "llt": "Stroke", "primary_path": "Y", "external_suggestions": [{ "external_definition_name": "my_medcdr_company", "external_id": "123456-ABC", "relevance_score": 5, "external_version": "APR-2023v1.1", "soc_code": "10029205", "soc": "Nervous system disorders", "hlgt_code": "10019231", "hlgt": "Headaches", "hlt_code": "10027603", "hlt": "Migraine headaches", "pt_code": "10027599", "pt": "Migraine", "llt_code": "10027599", "llt": "Migraine", "primary_path": "Y" }, { "external_definition_name": "my_medcdr_company", "external_id": "123457-ABC", "relevance_score": 10, "external_version": "APR-2023v1.1", "soc_code": "10029205", "soc": "Nervous system disorders", "hlgt_code": "10007963", "hlgt": "Central nervous system vascular disorders",

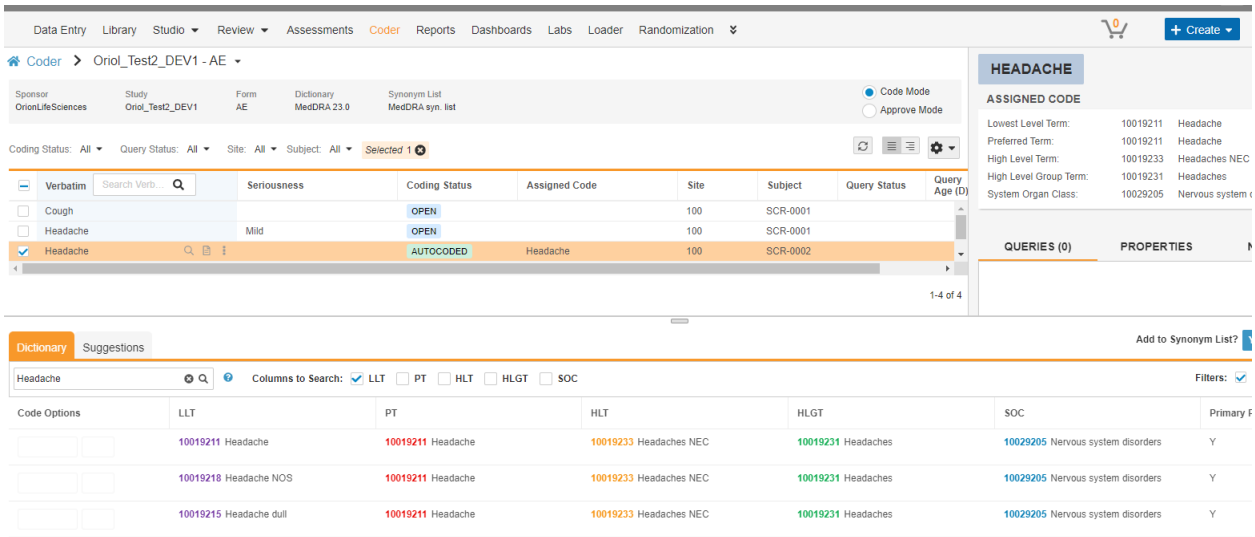
Description / Request (URL)	Response

	"hlt_code": "10007948",
	"hlt": "Central nervous system haemorrhages and cerebrovascular accidents",
	"pt_code": "10008190",
	"pt": "Cerebrovascular accident",
	"llt_code": "10042244",
	"llt": "Stroke",
	"primary_path": "Y"
	}
	]
	},
	{
	"id": "V0T000000027002",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"verbatim": "Stroke",
	"start_date": "",
	"stop_date": "",
	"eventgroup_name": "egMain",
	"eventgroup_sequence": 1,
	"event_name": "evMIN",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 3,
	"itemgroup_name": "igAE",
	"itemgroup_sequence": 1,
	"item_name": "AETERM",
	"coding_status": "open__v",
	"last_coded_date": null,
	"last_modified_date": "2023-04-24T18:40:48Z",
	"created_date": "2023-04-24T18:40:46Z",
	"created_by": "System",
	"other_properties": {},
	"seriousness": "",
	"severity": "",
	"soc_code": "",
	"soc": "",
	"hlgt_code": "",
	"hlgt": "",
	"hlt_code": "",
	"hlt": "",
	"pt_code": "",
	"pt": "",
	"llt_code": "",
	"llt": "",
	"primary_path": "",
	"external_suggestions": []

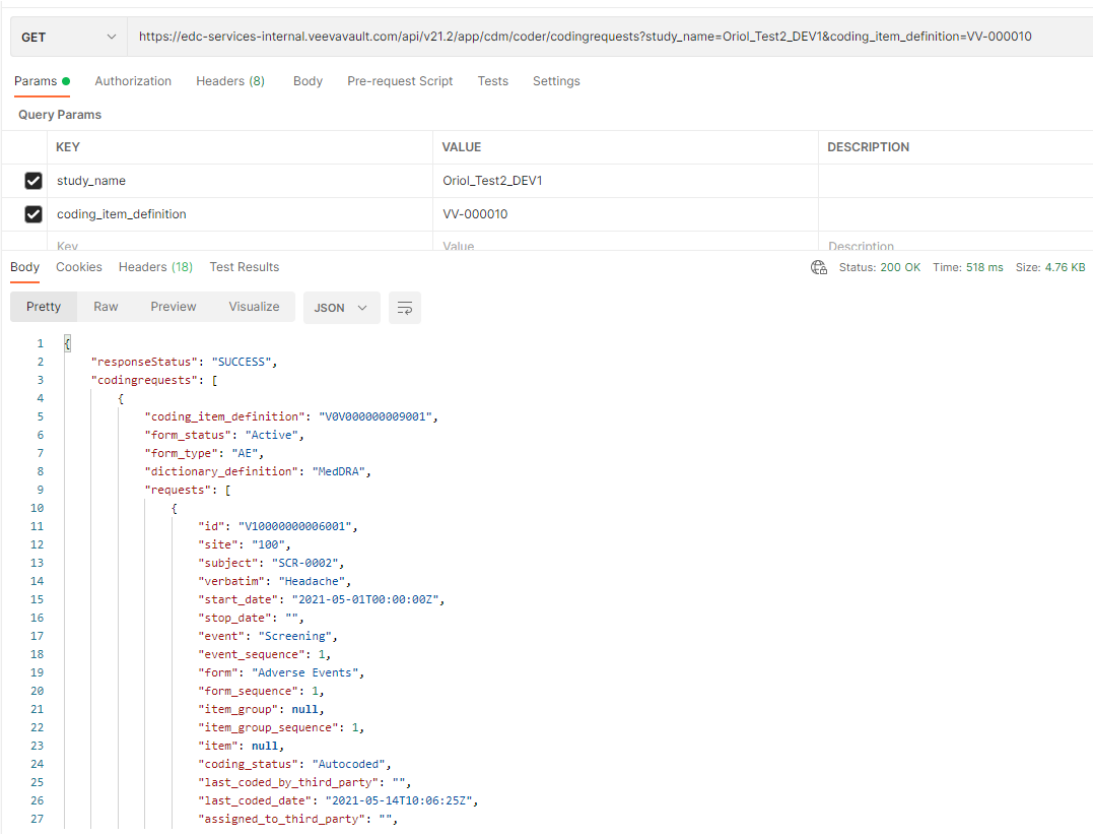
Description / Request (URL)	Response
	}] }] }
Filter to those requests without any external suggestions (assuming study activated for external suggestions)	
.../app/cdm/coder/codingrequests?study_name=ABCPharma_DEV1&coding_item_definition_id=V0T000000004001&has_external_suggestions=false&include_external_suggestions=true	(Like above examples, but only those requests where zero external suggestions are in place)

Flow Based Examples

These medical coding requests in the Coder UI



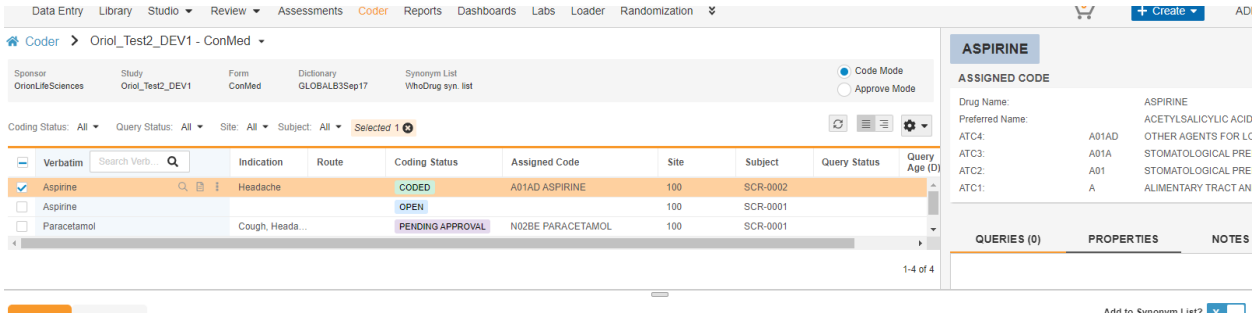
Are retrieved with this API GET:



Further down the return is the coding for the AE:

```
30            "created_by": "System",
31            "other_properties": {
32                "Other Action Taken": null
33            },
34            "seriousness": "",
35            "severity": "",
36            "llt_code": "10019211",
37            "llt": "Headache",
38            "pt_code": "10019211",
39            "pt": "Headache",
40            "hlt_code": "10019233",
41            "hlt": "Headaches NEC",
42            "hlgt_code": "10019231",
43            "hlgt": "Headaches",
44            "soc": "Nervous system disorders",
45            "soc_code": "10029205",
46            "primary_path": "Y"
47        },
```


For WHODrug requests (ConMeds, etc.), in EDC we see coding:



Returned in API for detail of coding as:


```
24            "coding_status": "Coded",
25            "last_coded_by_third_party": "",
26            "last_coded_date": "2021-05-14T10:19:24Z",
27            "assigned_to_third_party": "",
28            "last_modified_date": "2021-05-14T11:51:16Z",
29            "created_date": "2021-05-14T10:18:59Z",
30            "created_by": "System",
31            "other_properties": {},
32            "indication": "Headache",
33            "route": "",
34            "drug_name": "ASPIRINE",
35            "drug_code": "00002701014",
36            "preferred_code": "00002701001",
37            "preferred_name": "ACETYLSALICYLIC ACID",
38            "atc4_code": "A01AD",
39            "atc4": "OTHER AGENTS FOR LOCAL ORAL TREATMENT",
40            "atc3_code": "A01A",
41            "atc3": "STOMATOLOGICAL PREPARATIONS",
42            "atc2_code": "A01",
43            "atc2": "STOMATOLOGICAL PREPARATIONS",
44            "atc1_code": "A",
45            "atc1": "ALIMENTARY TRACT AND METABOLISM"
46        },
```

11.2 Retrieve Coding Queries

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-coding-queries
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/queries
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
coding_item_definition	Required	See the **Study Design -> Retrieve Coding Form Definitions** for retrieving these values. There, the `coding_item_definition_id` is the value to use into this endpoint.
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Use this API to retrieve the existing queries of a specific ID (or IDs). The ID of the query is returned on add via the API, or from **Retrieve Queries** endpoint.
- The return value **manual** is such that **false** = added by the system.
- When the query was added via a specific design rule, the **rule_definition** indicates the name of the rule that originated the query.
- Queries are added at the item or event level. For event level, the form 'down' information is of course omitted
- For the **coding_item_definition** parameter, the appropriate value for the study / coding item definition, use the endpoint **Study Design -> Retrieve Coding Form Definitions**. Specifically the response parameter: `coding_item_definition_id`
- The return includes a messages array with each comment/message appended to the query. Reading top down in that array also reveals the progression of query status, and by whom
- Additional filtering / retrieval of queries is discussed in other sections (By Filters or By Medical Coding Definition, see Queries chapter)

Examples

Description / Request (URL)	Response
By specific coding definition ID	

.../app/cdm/queries?coding_item_definition=V0T000000002001&study_name=ABCP-2022-01_DEV1	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"queries": [
	{
	"id": "OPW00000000V001",
	"query_name": "VV-000233",
	"manual": true,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 2,
	"itemgroup_name": "ig-AE",
	"itemgroup_sequence": 1,
	"item_name": "AETERM",
	"coding_item_definition": "V0T000000002001",
	"created_date": "2022-06-08T20:09:48Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY00000000W001",
	"activity": "open__v",
	"message": "Please check this value, this is a query from coding add via API",
	"message_date": "2022-06-08T20:09:48Z",
	"message_by": "Eric Emerton"
	}
	]
	}
	]
	}

Queries across two coding definitions	

Description / Request (URL)	Response

.../app/cdm/queries?coding_item_definition=V0T000000002001,V0T000000004001&study_name=ABCP-2022-01_DEV1	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 2,
	"total": 2
	},
	"queries": [
	{
	"id": "OPW00000000V001",
	"query_name": "VV-000233",
	"manual": true,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",
	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "AE",
	"form_sequence": 2,
	"itemgroup_name": "ig-AE",
	"itemgroup_sequence": 1,
	"item_name": "AETERM",
	"coding_item_definition": "V0T000000002001",
	"created_date": "2022-06-08T20:09:48Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY00000000W001",
	"activity": "open__v",
	"message": "Please check this value, this is a query from coding add via API",
	"message_date": "2022-06-08T20:09:48Z",
	"message_by": "Eric Emerton"
	}
	]
	},
	{
	"id": "OPW00000000W001",
	"query_name": "VV-000234",
	"manual": true,
	"query_status": "open__v",
	"study_country": "United States",
	"site": "101",
	"subject": "SCR-0001",

Description / Request (URL)	Response

	"eventgroup_name": "LOGS",
	"eventgroup_sequence": 1,
	"event_name": "LOGS",
	"event_sequence": 1,
	"form_name": "Concomitant-Medication",
	"form_sequence": 1,
	"itemgroup_name": "ig-CM",
	"itemgroup_sequence": 1,
	"item_name": "CMTRT",
	"coding_item_definition": "V0T000000004001",
	"created_date": "2022-06-08T20:57:31Z",
	"created_by": "Eric Emerton",
	"messages": [
	{
	"id": "OPY00000000X002",
	"activity": "open__v",
	"message": "Please check this value, this is a query from coding add via API (3rd add to CM)",
	"message_date": "2022-06-08T20:57:31Z",
	"message_by": "Eric Emerton"
	}
	]
	}
	]
	}

11.3 Open Coding Queries

Help Main	https://developer-cdms.veevavault.com/api/23.2/#open-coding-query
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/coder/actions/openquery
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
coding_request	queries	Required	The ID of the medical coding request. The query will be added against the item that the coding request applies to
message	queries	Required	The message of the query on add (255 character limit)

Notes

- The action is used to add a **new** query to an item, specifically the item that is attached / referenced by a specific medical coding request. (e.g. AE verbatim or CM verbatim)
- The limit for actions in one request is **100**.
- **WARNING:** A locked form will not allow the add a new query, just at the EDC UI would disallow. Frozen forms will accept new queries added via the API.
- Additional abilities to open queries are available at:
  - **Open Queries - By Study Context**
  - **Open Queries - By Item ID** (different style of response)
  - **Open Queries - By Event ID** (different style of response)

Examples

Description / Request (URL)	Response
Multiple queries added	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "queries": [
            {
               "coding_request": "V0V000000004001",
                "message": "This is a query from coding
add via API"
            },
            {
               "coding_request": "V0V000000003002",
                "message": "This is a query from coding
add via API"
            }
            ]
  }
```

```
{
    "responseStatus": "SUCCESS",
    "queries": [
        {
            "responseStatus": "SUCCESS",
            "id": "OPW00000000W001",
            "query_name": "VV-000234",
            "query_status": "open__v",
            "coding_request": "V0V000000004001"
        },
        {
            "responseStatus": "SUCCESS",
            "id": "OPW00000000V001",
            "query_name": "VV-000233",
            "query_status": "open__v",
            "coding_request": "V0V000000003002"
        }
```

Description / Request (URL)	Response
	] }
Multiple queries attempted, one succeeds, one fails	

{
"study_name": "ABCP-2022-01_DEV1",
"queries": [
{
"coding_request": "V0V000000004001",
"message": "This is a query from coding add via API"
},
{
"coding_request": "V0V00000000300233",
"message": "This is a query from coding add via API"
}
]
}
	{
	"responseStatus": "SUCCESS",
	"queries": [
	{
	"responseStatus": "SUCCESS",
	"id": "OPW00000000W001",
	"query_name": "VV-000234",
	"query_status": "open__v",
	"coding_request": "V0V000000004001"
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Coding Request] with id [V0V00000000300233] not found",
	"coding_request": "V0V00000000300233"
	}
	]
	}

11.4 Set Coding Suggestions

Help Main	https://developer-cdms.veevavault.com/api/23.2/#set-coding-suggestions
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/coder/actions/setcodingsuggestions
Parameters	

Name	Array	Req/Opt	Notes
study_name		Required	Name of the study
external_definition_name		Required	The ID of the medical coding request. The query will be added against the item that the coding request applies to
id	requests	Required	The message of the query on add (255 character limit)
dictionary_release	requests	Required	The id value for the Medical Coding Request. These values can be found in the responses from **Retrieve Coding Requests**
verbatim	requests	Optional	This value must match the current dictionary version (name__v value) of that coding form in the study. The current value can be found both at **Retrieve Coding Form Definitions** and with each response entry returned in **Retrieve Coding Requests**. If passed in the attempt, and it does not match the current value in CDMS, the attempt on the coding request is rejected.
indication	requests	Optional	(**WHODrug** only) When passed with the attempt, the current value of the value is checked in the study. This is helpful in ensuring the value used in the external coding algorithm is still the same in the study, at the time of posting the suggestions. Later changes to this in the system will appropriately remove suggestions since they no longer apply. If the value is **not** passed, the extra check is not performed. **WARNING**: A study must be configured for the coding form to use this property.
route	requests	Optional	(**WHODrug** only) When passed with the attempt, the current value of the value is checked in the study. This is helpful in ensuring the value used in the external coding algorithm is still the same in the study, at the time of posting the suggestions. Later changes to this in the system will appropriately remove suggestions since they no longer apply. If the value is **not** passed, the extra check is not performed. **WARNING**: A study must be configured for the coding form to use this property.
external_id	../external_suggestions	Optional	Use this field to set a value meaningful to the remote system / algorithm, e.g. an ID from a database storing these suggestion combinations.
relevance_score	../external_suggestions	Required	This is the value for the suggestion that ranks it amongst other suggestions of the same request. The higher the number, the better the ranking, i.e. appearing at the top in the user interface. For example, suggestions with relevance score of 10, 70, 40, 95, 20 in the post of five suggestions would be ordering in the Coder user interface (reading

			down) in order 95,70,40,20,10
external_version	../external_suggestions	Optional	Use this field to set a value meaningful to the remote system / algorithm, e.g. its version when the suggestion was generated.
soc_code	../external_suggestions	Required	(**MedDRA only**) The soc_code value for the suggestion
soc	../external_suggestions	Required	(**MedDRA only**) The soc value for the suggestion
hlgt_code	../external_suggestions	Required	(**MedDRA only**) The hlgt_code value for the suggestion
hlgt	../external_suggestions	Required	(**MedDRA only**) The hlgt value for the suggestion
hlt_code	../external_suggestions	Required	(**MedDRA only**) The hlt_code value for the suggestion
hlt	../external_suggestions	Required	(**MedDRA only**) The hlt value for the suggestion
pt_code	../external_suggestions	Required	(**MedDRA only**) The pt_code value for the suggestion
pt	../external_suggestions	Required	(**MedDRA only**) The pt value for the suggestion
llt_code	../external_suggestions	Required	(**MedDRA only**) The llt_code value for the suggestion
llt	../external_suggestions	Required	(**MedDRA only**) The llt value for the suggestion
primary_path	../external_suggestions	Optional	(**MedDRA only**) The primary path value for the suggestion - only values of **Y** (Yes) or **N** (No) allowed.
drug_code	../external_suggestions	Required	(**WHODrug only**) The drug_code value for the suggestion
drug_name	../external_suggestions	Required	(**WHODrug only**) The drug_name value for the suggestion
preferred_code	../external_suggestions	Required	(**WHODrug only**) The preferred_code value for the suggestion
preferred_name	../external_suggestions	Required	(**WHODrug only**) The preferred_code value for the suggestion
atc1_code	../external_suggestions	Depends	(**WHODrug only**) **WARNING**: Can be **Required**, depending on study configuration. The atc1_code value for the suggestion
atc1	../external_suggestions	Depends	(**WHODrug only**) **WARNING**: Can be **Required**, depending on study configuration. The atc1 value for the suggestion
atc2_code	../external_suggestions	Optional	(**WHODrug only**) The atc2_code value for the suggestion
atc2	../external_suggestions	Optional	(**WHODrug only**) The atc2 value for the suggestion
atc3_code	../external_suggestions	Optional	(**WHODrug only**) The atc3_code value for the suggestion
atc3	../external_suggestions	Optional	(**WHODrug only**) The atc3 value for the suggestion
atc4_code	../external_suggestions	Optional	(**WHODrug only**) The atc4_code value for the suggestion
atc4	../external_suggestions	Optional	(**WHODrug only**) The atc4 value for the suggestion

Notes

- The action is used to set external coding suggestions to specific Medical Coding requests.
- The action will **DELETE** existing suggestions (for a request that has them currently), and replace with the new set posted (no upsert)
- To unset a request that has suggestions to have none, simply use "external_suggestions": [] (empty array of suggestions)
- Each suggestion (of request) is validated against a match of dictionary version (current on the Med Coding Request) and vendor/company name
- Each study must be activated in its study settings to use external suggestions. The company/vendor on the post then also must match the **API Name** as set up in the Vault for that company/vendor.

	● Optionally include verbatim / route / indication values with the post of suggestions to have the state of the request checked that there have been no changes since the external suggestion engine created its suggestions. ● Suggestions posted to one coding request is limited to **5** ● The limit for actions in one API post is **100**. (coding requests) ● As with other Vault/CDMS APIs, batch actions are allowed. But, with this ability, the top level SUCCESS is **not** an indicator that each of the coding requests (their suggestions) were successful. Always (this or any Vault API) inspect the entry level SUCCESS/FAILURE properly. ● Perform searches of existing coding requests, optionally including suggestions currently attached to them, or just for those that lack suggestions (i.e. to then set suggestions to)

Examples

Description / Request (URL)	Response
Set of MedDRA request suggestions	


```
{
    "study_name": "ABCP-2022-01_DEV1",
    "external_definition_name": "API_company_name_here",
    "requests": [
    {
        "id": "V0V000000003002",
        "dictionary_release": "MedDRA_25_1",
        "verbatim": "Severe Headache",
        "external_suggestions": [
        {
            "external_id": "123456-ABC",
            "relevance_score": 5,
            "external_version": "JAN-2022v1.1",
            "soc": "Nervous system disorders",
            "soc_code": "10029205",
            "hlgt_code": "10019231",
            "hlgt": "Headaches",
            "hlt_code": "10027603",
            "hlt": "Migraine headaches",
            "pt_code": "10027599",
            "pt": "Migraine",
            "llt_code": "10027599",
            "llt": "Migraine",
            "primary_path": "Y"
        },
        {
            "external_id": "123457-ABC",
            "relevance_score": 4,
            "external_version": "JAN-2022v1.1",
              :
              ... etc...
              :



        },
        :
        : etc.. 5 suggestions this one
        :
        ]
    },
    {
        "id": "V0V000000003003",
        "dictionary_release": "MedDRA_25_1",
        "verbatim": "Back pain",
```

```
{
    "responseStatus": "SUCCESS",
    "study_name": "ABCP-2022-01_DEV1",
    "external_definition_name": "API_company_name_here",
    "requests": [
        {
            "responseStatus": "SUCCESS",
            "id": "V0V000000003002",
            "dictionary_release": "MedDRA_25_1",
            "verbatim": "Severe Headache",
            "external_suggestions": 5
        },
        {
            "responseStatus": "SUCCESS",
            "id": "V0V000000003003",
            "dictionary_release": "MedDRA_25_1",
            "verbatim": "Back pain",
            "external_suggestions": 3
        }
}
```

Description / Request (URL)	Response
"external_suggestions": [: : etc.. 3 suggestions this one :] }] }	
Set of WHODrug request suggestions	

{
"study_name": "ABCP-2022-01_DEV1",
"external_definition_name": "API_company_name_here",
"requests": [
{
"id": "V0V000000003002",
"dictionary_release": "GLOBALC3Mar19",
"verbatim": "Aspirin",
"indication": "Headache",
"route": "Oral",
"external_suggestions": [
{
"external_id": "1234345-XYZ",
"relevance_score": 100,
"external_version": "JAN-2022v1.1",
"drug_name": "Aspirin",
"drug_code": "00002701004",
"preferred_code": "00002701001",
"preferred_name": "Acetylsalicylic acid",
"atc1_code": "N",
"atc1": "NERVOUS SYSTEM"
"atc2_code": "N02",
"atc2": "ANALGESICS",
"atc3_code": "N02B",
"atc3": "OTHER ANALGESICS AND ANTIPYRETICS",
"atc4_code": "N02BA",
"atc4": "Salicylic acid and derivatives",
}
{
"external_id": "1234345-XYZ",
"relevance_score": 95,
"external_version": "JAN-2022v1.1",
... etc...
 	
},
:
: etc.. 5 suggestions for this coding request
:
	{
	"responseStatus": "SUCCESS",
	"study_name": "ABCP-2022-01_DEV1",
	"external_definition_name": "API_company_name_here",
	"requests": [
	{
	"responseStatus": "SUCCESS",
	"id": "V0V000000003002",
	"verbatim": "Aspirin",
	"indication": "Headache",
	"route": "Oral",
	"dictionary_release": "GLOBALC3Mar19",
	"external_suggestions": 5
	},
	{
	"responseStatus": "SUCCESS",
	"id": "V0V000000003003",
	"verbatim": "Ibuprofen",
	"indication": "Joint Pain",
	"route": "Oral",
	"dictionary_release": "GLOBALC3Mar19",
	"external_suggestions": 3
	}
	}

Description / Request (URL)	Response

]
},
{
"id": "V0V000000003003",
"dictionary_release": "GLOBALC3Mar19",
"verbatim": "Ibuprofen",
"indication": "Joint Pain",
"route": "Oral",
"external_suggestions": [
:
: etc.. 3 suggestions for this coding request here...
:
]
}
]
}	

Remove suggestions from a coding request	

{
"study_name": "ABCP-2022-01_DEV1",
"external_definition_name": "API_company_name_here",
"requests": [
{
"id": "V0V000000003002",
"dictionary_release": "GLOBALC3Mar19",
"external_suggestions": []
}
]
}
	{
	"responseStatus": "SUCCESS",
	"study_name": "ABCP-2022-01_DEV1",
	"external_definition_name": "API_company_name_here",
	"requests": [
	{
	"responseStatus": "SUCCESS",
	"id": "V0V000000003002",
	"verbatim": "Aspirin",
	"indication": "Headache",
	"route": "Oral",
	"dictionary_release": "GLOBALC3Mar19",
	"external_suggestions": 0
	}
	}

Top level failure (study not configured)	

{
"study_name": "ABCP-2022-01_DEV1",
"external_definition_name": "API_company_name_here_bad_name",
"requests": [
{
"id": "V0V000000003002",
"dictionary_release": "GLOBALC3Mar19",
"external_suggestions": [
:
...etc..
:
]
},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "[External Definition Name] with name [API_company_name_here_bad_name] not found in study configuration for external suggestions"
	}

Description / Request (URL)	Response
: etc.. more requests and suggestions :] }	
Entry level failure (one succeeds, one fails)	

{
"study_name": "ABCP-2022-01_DEV1",
"external_definition_name": "API_company_name_here",
"requests": [
{
"id": "V0V000000003002",
"dictionary_release": "MedDRA_25_1",
"verbatim": "Severe Headache",
"external_suggestions": [
{
"external_id": "123456-ABC",
"relevance_score": 5,
"external_version": "JAN-2022v1.1",
"soc": "Nervous system disorders",
"soc_code": "10029205",
"hlgt_code": "10019231",
"hlgt": "Headaches",
"hlt_code": "10027603",
"hlt": "Migraine headaches",
"pt_code": "10027599",
"pt": "Migraine",
"llt_code": "10027599",
"llt": "Migraine",
"primary_path": "Y"
}
{
"external_id": "123457-ABC",
"relevance_score": 4,
"external_version": "JAN-2022v1.1",
... etc...
 	
},
{
... etc... other suggestions
}
]
},
{
"id": "V0V000000003002",
"dictionary_release": "MedDRA_25_1",
"verbatim": "Back pain",
	{
	"responseStatus": "SUCCESS",
	"study_name": "ABCP-2022-01_DEV1",
	"external_definition_name": "My Company Name",
	"requests": [
	{
	"responseStatus": "SUCCESS",
	"id": "V0V000000003002",
	"dictionary_release": "MedDRA_25_1",
	"verbatim": "Severe Headache",
	"external_suggestions": 5
	},
	{
	"responseStatus": "FAILURE",
	"errorMessage": "The verbatim submitted with the suggestions is no longer the verbatim in the system. Suggestions were not updated for the coding request.",
	"id": "V0V000000003003",
	"dictionary_release": "MedDRA_25_1",
	"verbatim": "Severe back pain"
	}
	}

Description / Request (URL)	Response
"external_suggestions": [: : etc.. 3 suggestions for this coding request here... but verbatim is stale / out of date :] }] }	

12 Jobs

12.1 Jobs / Data Extracts Overview

Currently the main full extract of the CDMS system (a study) is the **Study Data Extract**, itself a job inside the CDMS **EDC Tools** area -> **Jobs** tab. The job run yields a zip file that is cumulative of the entire study. This section will discuss the start / retrieve status / get file of this type of job, primarily, but also catalog other data export job types. There are additionally targeted data retrieval endpoints discussed in early sections of this document (**Retrieve Events / Forms** and **Retrieve Forms / Item Data**), but these are not meant for the retrieval of large amounts of data, i.e. across the entire study. Their purpose is for 'inspect before update' needs. Attempts to get wide slices of study data should work through the jobs, and their resulting zip files.

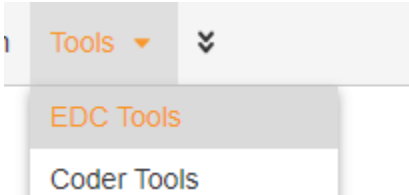
NOTE: There is no current incremental based export, it is a planned feature of CDMS, accompanied by API endpoints to drive.

The current CDMS study job types for extracting data:

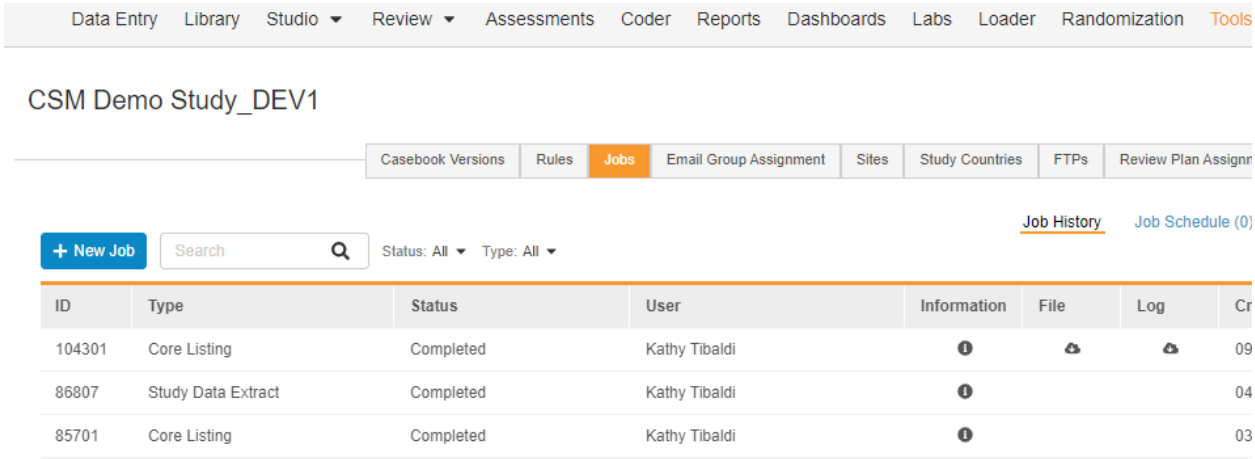
Job Type	API Value	Notes
Study Data Export (SDE)	study_data_export__v	The full data export for a study. Includes the form data (e.g., AE, CM, DM) however that is configured, as well as operational datasets (SYS_* in name). The job **can** be run on a subset of datasets. Full details at: CDMS Help
Subject Progress Listing	subject_progress_listing__v	Operational listing of the study. Each row is a subject, with counts of progress of the subject. The job **cannot** be run in subsets.
Event Progress Listing	event_progress_listing__v	Operational listing of the study. Each row is an event, detailing that event status, date, and other information. The job **cannot** be run in subsets.
Form Progress Listing	form_progress_listing__v	Operational listing of the study. Each row is a form, detailing that form status, form properties, and other information. The job **cannot** be run in subsets.
Query Detail Listing	query_detail_listing__v	Operational listing of the study. Each row is a query in the study, detailing that status, cycle times, and other information. The job **cannot** be run in subsets.
Core Listings	core_listing__v	A predecessor of the SDE, only the form data listings, and of a different format than the SDE. The job **can** be run on a subset of data.
Data and Definitions	data_and_definition_export__v	A predecessor of the SDE, the data and definition file formats are different from the SDE. The job **cannot** be run in subsets. **WARNING: This job type is slated for deprecation at the 23R3 release of CDMS**
Audit Trail by Study	audit_trail_export__v	Job that produces audit trail reporting, with specified start to end date ranges and/or specific users. The result of the job is a zip file containing CSVs, by Subject. The range of start to end can be no more than 30 days when starting this job from the API. Wider ranges are started from the EDC Tools user interface.
Audit Trail by Site	audit_trail_export_by_site__v	Job that produces audit trail reporting, with specified start to end date ranges, specific users, and/or specific sites. The result of the job is a zip file containing CSVs, by _Subject_. The range of start to end can be no more than

Job Type	API Value	Notes
		30 days when starting this job from the API. Wider ranges are started from the EDC Tools user interface.
Audit Trail by Subject	audit_trail_export_by_subject__v	Job that produces audit trail reporting, with specified start to end date ranges, specific users, and/or specific subjects. The result of the job is a zip file containing CSVs, by _Subject_. The range of start to end can be no more than 30 days when starting this job from the API. Wider ranges are started from the EDC Tools user interface.

As background to study jobs, and in the context of the **Study Data Extract** (SDE), the tab for **EDC Tools** (for roles that have rights):

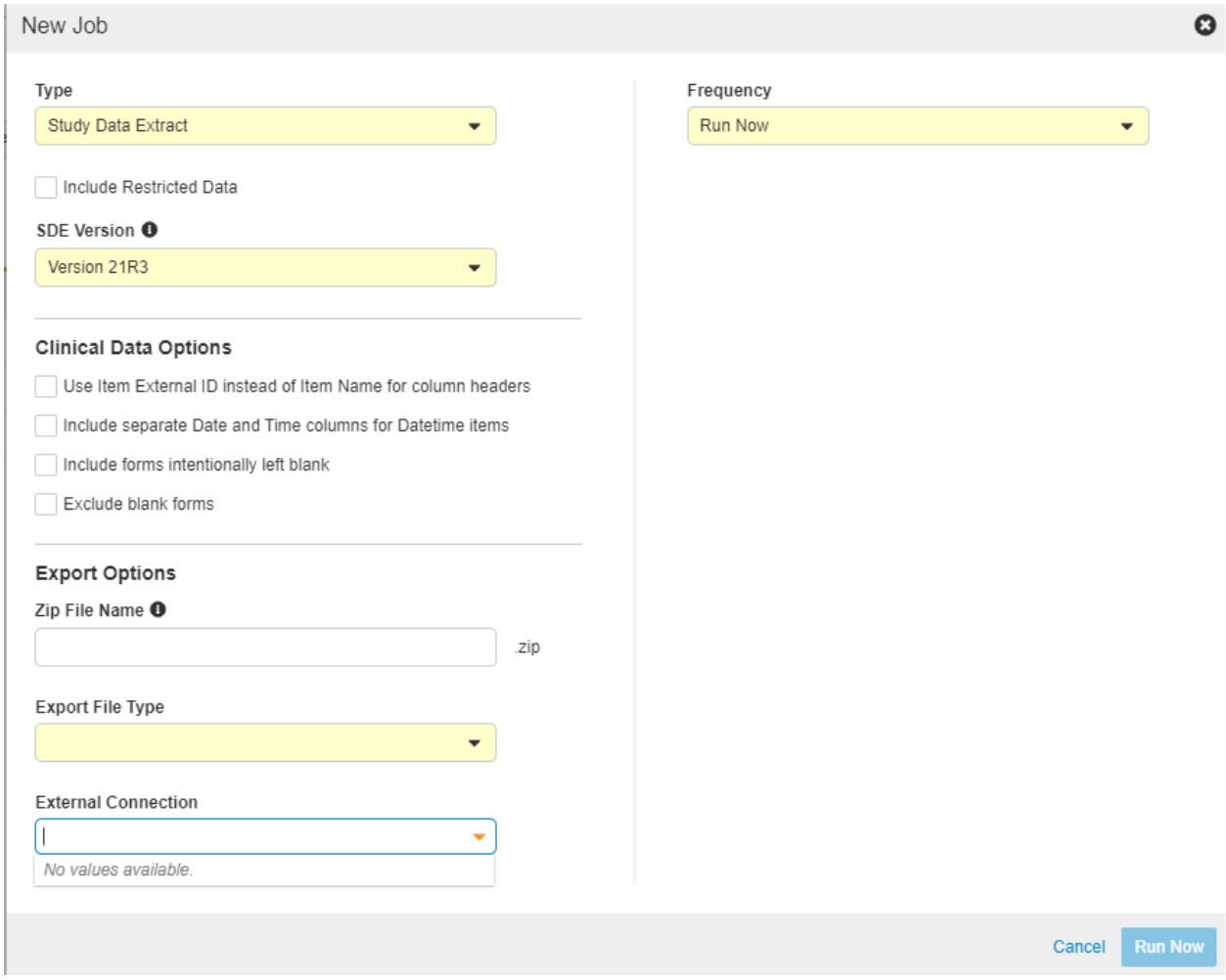


.. then selecting a study:

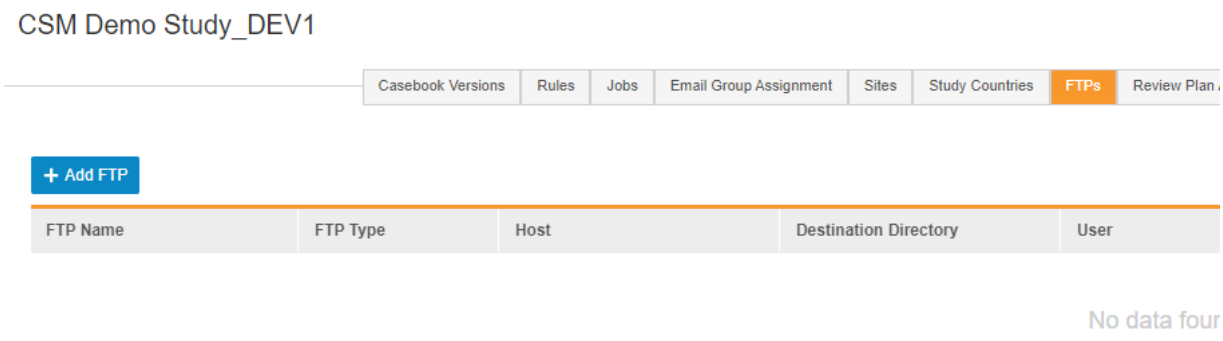


The Jobs tab of this section is where the Study Data Extract (SDE) and other export jobs can be run.

The job create screen:



… includes various options, each of which can be set if driving from the API start job endpoint. The **External Connection** - choices are a Vault FTP folder location, specifically set up at the sub tab (same screen):



See this online help area for setup of the FTP connection: https://cdmshelp.veeva.com/gr/study-administrators/connections/
A running job is shown as:

ID	Type	Status	User	Information	File	Log	Created
104572	Study Data Extract	In Progress	Eric Emerton				09/27/2021 10:56 AM EDT
104301	Core Listing	Completed	Kathy Tibaldi				09/24/2021 12:51 PM EDT

… and when finished:

+ New Job Search Status: All Type: All

ID	Type	Status	User	Information	File	Log	Created
104572	Study Data Extract	Completed	Eric Emerton				09/27/2021 10:56 AI
104301	Core Listing	Completed	Kathy Tibaldi				09/24/2021 12:51 PI

The File icon will download the resulting file:

ds > CSM_Demo_Study_DEV1_Study_Data_Extract_2021_09_27_10_56_EDT.zip Search CSM_Demo_Study_DEV1_Study

Name	Type	Compressed size	Password ...	Size	Ratio
AE.csv	Microsoft Excel Comma S...	1 KB	No	2 KB	62%
CATH.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	42%
CM.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	52%
CSM Demo Study_DEV1-Definition...	Microsoft Excel Comma S...	14 KB	No	77 KB	83%
DCID.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	50%
DD.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	67%
DM.csv	Microsoft Excel Comma S...	1 KB	No	2 KB	60%
DSES.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	37%
DSET.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	37%
DSIC.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	34%
DSSF.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	35%
ECOG.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	36%
EG.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	66%
EX.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	55%
FT_6MW.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	37%
HGT.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	45%
IC.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	65%
IE.csv	Microsoft Excel Comma S...	1 KB	No	2 KB	74%
INTL.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	44%
INTLS.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	47%
IRECIST_1.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	53%
ITL.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	42%
LB_BCLSC.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	39%
LB_BDISC.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	39%
LB_BDOSC.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	39%
LB_CTDNA.csv	Microsoft Excel Comma S...	1 KB	No	1 KB	40%

The above zip file contains CSV, and often .sas7bdat files, as well as a definition file set to describe the export. It's the means of full export of all data in a study, not specific API calls. It does include various SYS_* named datasets, operational study data, that does not change per study design:

SYS_EVT.csv	Microsoft Excel Comma S...	1 KB	No
SYS_FORM.csv	Microsoft Excel Comma S...	2 KB	No
SYS_ILB.csv	Microsoft Excel Comma S...	1 KB	No
SYS_LINKS.csv	Microsoft Excel Comma S...	1 KB	No
SYS_PD.csv	Microsoft Excel Comma S...	1 KB	No
SYS_Q.csv	Microsoft Excel Comma S...	2 KB	No
SYS_QT.csv	Microsoft Excel Comma S...	1 KB	No
SYS_SITE.csv	Microsoft Excel Comma S...	1 KB	No
SYS_SUB.csv	Microsoft Excel Comma S...	1 KB	No
TL.csv	Microsoft Excel Comma S...	1 KB	No

More specific information on the format / files can be found at: https://cdmshelp.veeva.com/gr/study-administrators/study-data-extracts/

Retrieval options for the SDE zip file:

Option A: Vault FTP folder, through general FTPS connection. (Port 21, FTPS client software or other automation). The requires the setup of the FTP connector in EDC Tools, and selection at time of running the job (ad-hoc or scheduled)

Option B: Use of the Vault API for working with FTP folder, see also the next section of this document.

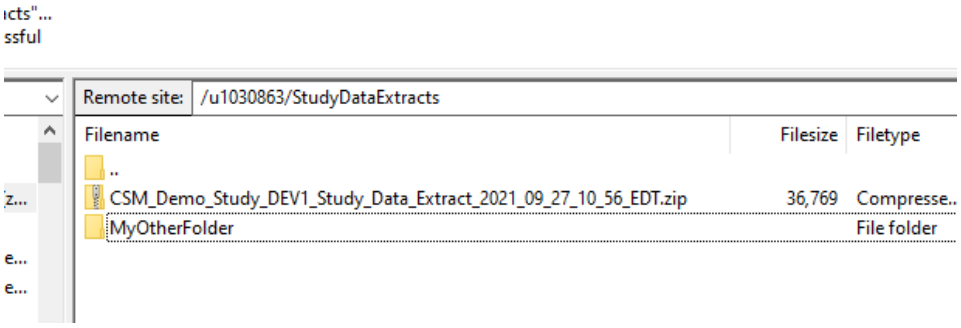
Option C: Use of the Get Job Output File endpoint, through the CDMS API endpoint.

12.2 Working with Vault FTP Folders Using Vault API

If the SDE or other similar extract jobs have a destination of the Veeva FTP location (also known as 'File Staging'), then one can use the SDE job zip delivered there through its otherwise recurring schedule. This alleviates the need to drive the start of the job / retrieve status, etc.

The main reference for Vault API, working with its FTP folders can be found here: https://developer.veevavault.com/api/23.2/#file-staging. The intent is to work with FTP folders, but via a REST API, instead of traditional FTPS / port 21 connections.

With the EDC Job configured to send the resulting SDE to an FTP, and viewing through an FTP tool like FIlezilla:



... we can use the API to retrieve files from that location (https://developer.veevavault.com/api/23.2/#list-items-at-a-path), using a REST call like:

.../api/v23.2/services/file_staging/items/**u1030863/StudyDataExtracts**?recursive=true

The return of the REST endpoint with recursive=true includes folders, and all files within:


```
{
    "responseStatus": "SUCCESS",
    "data": [
        {
            "kind": "file",
            "path": "/u1030863/StudyDataExtracts/CSM_Demo_Study_DEV1_Study_Data_Extract_2021_09_27_10_56_EDT.zip",
            "name": "CSM_Demo_Study_DEV1_Study_Data_Extract_2021_09_27_10_56_EDT.zip",
            "size": 36769,
            "modified_date": "2021-09-27T15:31:04.000Z"
        },
        {
            "kind": "folder",
            "path": "/u1030863/StudyDataExtracts/MyOtherFolder",
            "name": "MyOtherFolder"
        },
        {
            "kind": "file",
            "path": "/u1030863/StudyDataExtracts/MyOtherFolder/CSM_Demo_Study_DEV1_Study_Data_Extract_2021_09_27_10_56_EDT.zip",
            "name": "CSM_Demo_Study_DEV1_Study_Data_Extract_2021_09_27_10_56_EDT.zip",
            "size": 36769,
            "modified_date": "2021-09-27T15:31:32.000Z"
        }
    ]
}
```


Then, use the REST endpoint to stream the file(s), see the reference: https://developer.veevavault.com/api/23.2/#get-item-content

12.3 Retrieve Study Jobs

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-study-jobs
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs
Parameters	

Name	Req/Opt	Notes
study_name	Optional	Name of the study. When omitting, one can search across multiple studies
job_type	Required	The API name of the job type for the search. See valid values here: **Jobs / Data Extracts Overview**
created_start	Optional	Format of yyyy-MM-ddTHH:mm:ssZ, the jobs to retrieve since a specific date. When omitted, '7 days ago' is used (i.e. 'Now' - 7 days) **NOTE**: The difference between specific created_start and end can be no more than 30 days. (whether provided in the request, or defaults)
created_end	Optional	Format of yyyy-MM-ddTHH:mm:ssZ, the end of the range to search in. **NOTE**: The difference between specific created_start and end can be no more than 30 days. (whether provided in the request, or defaults)
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Use to get the recent finished jobs of a study (or studies) of a specific job type.
- The response is ordered **descending**, i.e. most recent at the top, reading down.
- If the API caller is **NOT** starting the SDE job, waiting, and retrieving that job's output zip file, this endpoint is used to retrieve those job IDs, which are required to retrieve the output file of a previous job. The typical use case:
  - Study is deployed live
  - Data manager (or other) schedules an SDE run in the EDC Tools UI
  - -> API jobs that watch the vault will see newly running SDE(s) jobs and retrieve as necessary
- The **job_id** value in the return is the value to use in the endpoint discussed later in this document - **Retrieve Job Output File**
- Only the job types mentioned in the **Jobs / Data Extracts Overview** section of this chapter can use this endpoint.

Examples

Description / Request (URL)	Response
Jobs (SDE) of a single study - with no start passed, assuming call on July 1st 2022 (for 'now')	

.../app/cdm/jobs?study_name=ABCPharma_DEV1&&job_type=study_data_extract__v	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 2,
	"total": 2
	},
	"created_start": "2022-06-01T12:00:00Z",
	"created_end": null,
	"jobs": [
	{
	"job_id": 324003,
	"job_type": "study_data_extract__v",
	"study_name": "ABCPharma_DEV1",
	"status": "completed__v",
	"created_by": "John Smith",
	"created_date": "2022-06-02T12:14:42Z",
	"last_modified_date": "2022-06-02T12:20:42Z"
	},
	{
	"job_id": 324002,
	"job_type": "study_data_extract__v",
	"study_name": "ABCPharma_DEV1",
	"status": "errors__v",
	"created_by": "John Smith",
	"created_date": "2022-06-01T08:14:42Z",
	"last_modified_date": "2022-06-01T08:02:42Z"
	}
	]
	}

Passing specific created start and end	

...app/cdm/jobs?study_name=ABCPharma_DEV1&job_type=study_data_extract__v&created_start=2022-05-15T12:00:00Z&created_end=2022-06-01T12:00:00Z	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"created_start": "2022-05-15T12:00:00Z",
	"created_end": "2022-06-01T12:00:00Z",

Description / Request (URL)	Response

	"jobs": [
	{
	"job_id": 324002,
	"job_type": "study_data_extract__v",
	"study_name": "Labrinone_DEV1",
	"status": "errors__v",
	"created_by": "John Smith",
	"created_date": "2022-06-01T08:14:42Z",
	"last_modified_date": "2022-06-01T08:02:42Z"
	}
	]
	}

12.4 Start Study Job - SDE

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-sde
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **study_data_extract__v**
include_restricted_data	Optional	false	Boolean - whether to include data that is otherwise on restricted forms. The API caller must have this permission to use **true**.
include_study_design	Optional	false	Boolean - whether the run will include an additional folder of definition CSVs
version	Required		The version of the SDE, in vXX.Y format (XX = year, Y = 1, 2, or 3). That is the format at release of the SDE. More information on system datasets here in CDMS Help
export_file_types	Required		JSON array of Strings - the formats desired on the SDE run. These values are one or more (any combination) of: ● CSV ● SAS ● XPT **WARNING**: At SDE version previous to 23R2, the parameter was export_file_type, with a single answer (of 2 choices). 23R2 and forward uses this new format, array of strings
file_name	Optional	(see notes)	If omitted, Vault names the ZIP file with "{Study_Name}*Study_Data_Extract*{DATETIME}{TIMEZONE}". Some restrictions apply to the file naming
external_connections	Optional		JSON array / list of the FTP connection names (setup in the study, via **EDC Tools**) to also forward the SDE zip file on to)
use_external_ids	Optional	false	Boolean - whether to use the item definition / form definition 'External ID' property, instead of design names
include_formilb	Optional	false	Boolean - include the Form ILB or not
split_datetime	Optional	false	Boolean - whether to split date time fields into 3 fields (main, date only, time only)
exclude_blank_forms	Optional	false	Boolean - whether to exclude rows/data from forms that are in status blank
include_rand_treatment	Optional	false	Boolean - only applicable if the study is using the Randomization module. Use of **true** includes the **SYS_RAND** dataset
all_clinical_datasets	Required		Boolean - whether to include all non-system (CRF) datasets
clinical_datasets	Optional *		If all_clinical_datasets = false, then this must be provided, a JSON array of dataset names to run

all_system_datasets	Required		Boolean - whether to include all system datasets, e.g. SYS_FORM, SYS_SUB, etc. More information on system datasets: CDMS Help
system_datasets	Optional *		Required if all_system_datasets = false. JSON array of SYS_* named datasets to run
include_custom_objects	Required		Boolean - whether to include any custom objects. These objects must also be registered with the study
custom_objects	Optional *		When include_custom_objects = true, the objects to include. These objects are set up in the object sde_customobject_config__v -> name__v value. That record refers to a custom object for export, i.e. records of that study. The custom object setup should be configured for deployments and have a study__c column
boolean_formatting	Optional	y_n	Possible values include: • y_n • y_n_empty • t_f • t_f_empty • 1_0 • 1_empty • 1_0_empty • true_false • true_false_empty • yes_no • yes_no_empty
item_display_label	Optional	label	Possible values include: • label • short_label The option is used to direct which style labels to use for SAS datasets, specifically the column labels

Notes	• When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job • For some system datasets (SYS_RAND, SYS_LAB*, SYS_ASM*), that module must be in use in the study, for the dataset to appear in the run.

Examples

Description / Request (URL)	Response
Common	

{
"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "study_data_extract__v",
"version": "v23.2",
"include_restricted_data": false,
"include_rand_treatment": false,
"export_file_types": ["CSV", "SAS"],
"use_external_ids": false,
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "study_data_extract__v",
	"job_id": 307484,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-27T20:30:05Z",
	"include_restricted_data": false,
	"include_study_design": false,

Description / Request (URL)	Response
"include_formilb": false, "split_datetime": false, "exclude_blank_forms": false, "all_clinical_datasets": true, "all_system_datasets": true, "include_custom_objects": false, "boolean_formatting": "y_n_empty", "item_display_label": "label" } }	"version": "v23.2", "export_file_types": ["CSV", "SAS"], "file_name": null, "external_connections": null, "use_external_ids": false, "include_formilb": false, "split_datetime": false, "exclude_blank_forms": false, "include_rand_treatment": false, "all_clinical_datasets": true, "clinical_datasets": null, "all_system_datasets": true, "system_datasets": null, "include_custom_objects": false, "custom_objects": null, "boolean_formatting": "y_n_empty", "item_display_label": "label" } }
Bare required options (thus all the defaults)	

{
"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "study_data_extract__v",
"version": "v23.2",
"export_file_types": ["CSV"],
"all_clinical_datasets": true,
"all_system_datasets": true,
"include_custom_objects": false
}
}
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "study_data_extract__v",
	"job_id": 307485,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-27T20:32:01Z",
	"include_restricted_data": false,
	"include_study_design": false,
	"version": "v23.2",
	"export_file_types": ["CSV"],
	"file_name": null,
	"external_connections": null,
	"use_external_ids": false,
	"include_formilb": false,
	"split_datetime": false,
	"exclude_blank_forms": false,
	"include_rand_treatment": false,
	"all_clinical_datasets": true,
	"clinical_datasets": null,
	"all_system_datasets": true,
	"system_datasets": null,
	"include_custom_objects": false,
	"custom_objects": null,
	"boolean_formatting": "y_n",
	"item_display_label": "label"
	}

Description / Request (URL)	Response
	`}`
Settings specific datasets, plus other options	

`{`
`"study_name": "ABCP-2022-01_DEV1",`
`"request": {`
`"job_type": "study_data_extract__v",`
`"version": "v23.2",`
`"include_restricted_data": true,`
`"include_rand_treatment": true,`
`"include_study_design": true,`
`"export_file_types": ["CSV", "SAS", "XPT"],`
`"file_name": "My_Zip_File",`
`"use_external_ids": true,`
`"include_formilb": true,`
`"split_datetime": true,`
`"exclude_blank_forms": true,`
`"all_clinical_datasets": false,`
`"clinical_datasets": [`
`"AE",`
`"DM"`
`],`
`"all_system_datasets": false,`
`"system_datasets": [`
`"SYS_FORM",`
`"SYS_Q"`
`],`
`"include_custom_objects": true,`
`"custom_objects": [`
`"doc_tracking__c",`
`"adjudication_tracking__c"`
`]`
`}`
`}`
	`{`
	`"responseStatus": "SUCCESS",`
	`"response": {`
	`"job_type": "study_data_extract__v",`
	`"job_id": 307486,`
	`"created_by": "eric.emerton@eke.com",`
	`"created_date": "2022-06-27T20:47:35Z",`
	`"include_restricted_data": true,`
	`"include_study_design": true,`
	`"include_rand_treatment": true,`
	`"version": "v23.2",`
	`"export_file_types": ["CSV", "SAS", "XPT"],`
	`"file_name": "My_Zip_File",`
	`"external_connections": null,`
	`"use_external_ids": true,`
	`"include_formilb": true,`
	`"split_datetime": true,`
	`"exclude_blank_forms": true,`
	`"include_rand_treatment": false,`
	`"all_clinical_datasets": false,`
	`"clinical_datasets": [`
	`"AE",`
	`"DM"`
	`],`
	`"all_system_datasets": false,`
	`"system_datasets": [`
	`"SYS_Q",`
	`"SYS_FORM"`
	`],`
	`"include_custom_objects": true,`
	`"custom_objects": [`
	`"doc_tracking__c",`
	`"adjudication_tracking__c"`
	`],`
	`"boolean_formatting": "y_n",`
	`"item_display_label": "label"`
	`}`
	`}`

Also Direct to the FTP Location(s)	

`{`
`"study_name": "ABCP-2022-01_DEV1",`
`"request": {`
`"job_type": "study_data_extract__v",`
`"version": "v23.2",`
	`{`
	`"responseStatus": "SUCCESS",`
	`"response": {`
	`"job_type": "study_data_extract__v",`
	`"job_id": 307485,`

Description / Request (URL)	Response
"export_file_types": ["CSV", "SAS", "XPT"], "all_clinical_datasets": true, "all_system_datasets": true, "include_custom_objects": false, "external_connections": ["My_FTP_Drop"] } }	"created_by": "eric.emerton@eke.com", "created_date": "2022-06-27T20:32:01Z", "include_restricted_data": false, "include_study_design": false, "version": "v23.2", "export_file_types": ["CSV", "SAS", "XPT"], "file_name": null, "external_connections": ["My_FTP_Drop"], "use_external_ids": false, "include_formilb": false, "split_datetime": false, "exclude_blank_forms": false, "include_rand_treatment": false, "all_clinical_datasets": true, "clinical_datasets": null, "all_system_datasets": true, "system_datasets": null, "include_custom_objects": false, "custom_objects": null, "boolean_formatting": "y_n", "item_display_label": "label" } }

12.5 Start Study Job - Subject Progress Listing

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-subject-progress
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **subject_progress_listing__v**
include_restricted_data	Optional	false	Boolean - whether to include data that is otherwise on restricted forms. The API caller must have this permission to use **true**.

Notes

- This listing generates data about subjects (row per subject) with various counts of their progress
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "request": {
                "job_type": "subject_progress_listing__v",
                "include_restricted_data": false
              }
}
```

```
{
    "responseStatus": "SUCCESS",
    "response": {
        "job_type": "subject_progress_listing__v",
        "job_id": 307480,
        "created_by": "eric.emerton@eke.com",
        "created_date": "2022-06-27T20:26:11Z",
        "include_restricted_data": false
    }
}
```

12.6 Start Study Job - Event Progress Listing

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-event-progress
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **event_progress_listing__v**
include_restricted_data	Optional	false	Boolean - whether to include data that is otherwise on restricted forms. The API caller must have this permission to use **true**.

Notes

- This listing generates data about events (row per subject events) with current status and other metric information about events.
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job	

{
"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "event_progress_listing__v",
"include_restricted_data": **false**
}
}
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "event_progress_listing__v",
	"job_id": 307481,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-27T20:26:39Z",
	"include_restricted_data": **false**
	}
	}

12.7 Start Study Job - Form Progress Listing

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-form-progress
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **form_progress_listing__v**
include_restricted_data	Optional	false	Boolean - whether to include data that is otherwise on restricted forms. The API caller must have this permission to use **true**.
include_item_counts	Optional	false	Whether to include an additional column about counts of items (data fields) on the forms

Notes

- This listing generates data about events (row per subject forms) with current status and other metric information about each form.
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job	
`{ "study_name": "ABCP-2022-01_DEV1", "request": { "job_type": "form_progress_listing__v", "include_restricted_data": false, "include_item_counts": false } }`	`{ "responseStatus": "SUCCESS", "response": { "job_type": "form_progress_listing__v", "job_id": 307482, "created_by": "eric.emerton@eke.com", "created_date": "2022-06-27T20:27:00Z", "include_restricted_data": false, "include_item_counts": false } }`

12.8 Start Study Job - Query Detail Listing

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-query-detail-listing
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **query_detail_listing__v**
include_restricted_data	Optional	false	Boolean - whether to include data that is otherwise on restricted forms. The API caller must have this permission to use **true**.

Notes

- This listing generates data about queries (row per subject query) with current status and other metric information about queries.
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "request": {
                "job_type": "query_detail_listing__v",
                "include_restricted_data": false
              }
}
```

```
{
    "responseStatus": "SUCCESS",
    "response": {
        "job_type": "query_detail_listing__v",
        "job_id": 307483,
        "created_by": "eric.emerton@eke.com",
        "created_date": "2022-06-27T20:27:26Z",
        "include_restricted_data": false
    }
}
```

12.9 Start Study Job - Core Listings

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-core-listings
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Notes
study_name	Required	Name of the study
job_type	Required	For this job type, the value is always **core_listing__v**
all_sites	Required	Boolean - whether to include data from all sites (or a subset)
sites	Required *	Required only when all_sites = false. JSON array of site numbers to include
all_forms	Required	Boolean - where to include all form data
forms	Required *	Required only when all_forms = false. JSON array of study design form names to include

Notes

- This export is a predecessor to the SDE, of a different format. It only returns CSVs of form data
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Core Listing - all sites	
`{ "study_name": "ABCP-2022-01_DEV1", "request": { "job_type": "core_listing__v", "all_sites": true, "all_forms": true, "forms": [] } }`	`{ "responseStatus": "SUCCESS", "response": { "job_type": "core_listing__v", "job_id": 305511, "created_by": "eric.emerton@eke.com", "created_date": "2022-06-17T19:39:51Z", "all_sites": true, "sites": null, "all_forms": true, "forms": null } }`
Core Listing - all sites = false, then specific list	
{	{

Description / Request (URL)	Response

"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "core_listing__v",
"all_sites": false,
"sites": ["101", "201", "102"],
"all_forms": true,
"forms": []
}
}
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "core_listing__v",
	"job_id": 305702,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-17T19:55:14Z",
	"all_sites": false,
	"sites": [
	"101",
	"201",
	"102"
	],
	"all_forms": true,
	"forms": null
	}
	}

Core Listing - specific forms and sites	

{
"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "core_listing__v",
"all_sites": false,
"sites": ["101"],
"all_forms": false,
"forms": ["AE"]
}
}
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "core_listing__v",
	"job_id": 305706,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-17T19:58:27Z",
	"all_sites": false,
	"sites": [
	"101"
	],
	"all_forms": false,
	"forms": [
	"AE"
	]
	}
	}

12.10 Start Study Job - Data and Definitions Export

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-dde
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **data_and_definition_export__v**
include_restricted_data	Optional	false	Boolean - whether to include data that is otherwise on restricted forms. The API caller must have this permission to use **true**.

Notes

- This export is a predecessor to the SDE, of a different format. It only returns CSVs of form data
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "request": {
                "job_type": "data_and_definition_export__v",
                "include_restricted_data": false
              }
}
```

```
{
    "responseStatus": "SUCCESS",
    "response": {
        "job_type": "data_and_definition_export__v",
        "job_id": 307579,
        "created_by": "eric.emerton@eke.com",
        "created_date": "2022-06-27T20:23:24Z",
        "include_restricted_data": false
    }
}
```

12.11 Start Study Job - Audit Trail by Study

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-audit-by-study
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **audit_trail_export__v**
date_range_start	Required		String, but as YYYY-MM-DD date formatted. The day from which the audit results will reflect. The start to end cannot exceed 30 days. If a wider range is necessary, it cannot be started from the API
date_range_end	Optional	(today)	String, but as YYYY-MM-DD date formatted. The day 'up to' audit results will reflect, e.g. <that day> 23:59, end of day. The start to end cannot exceed 30 days. If a wider range is necessary, it cannot be started from the API
specific_users	Optional	null / no filter on users	JSON array of vault user names to subset the results to. For example: ["joe.smith@abcpharma.com", "mary.jones@abcpharma.com"]

Notes

- The output file from the job is a zip file, with CSVs by subject
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job - no users	
`{ "study_name": "ABCP-2022-01_DEV1", "request": { "job_type": "audit_trail_export__v", "date_range_start": "2023-05-01", "date_range_end": "2023-05-03" } }`	`{ "responseStatus": "SUCCESS", "response": { "job_type": "audit_trail_export__v", "job_id": 307579, "created_by": "eric.emerton@eke.com", "created_date": "2022-06-27T20:23:24Z", "date_range_start": "2023-05-01", "date_range_end": "2023-05-03", "specific_users": null } }`

Description / Request (URL)	Response
Run the Job - with users	

{
"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "audit_trail_export__v",
"date_range_start": "2023-05-01",
"date_range_end": "2023-05-03",
"specific_users": ["jim.jones@abcpharma.com"]
}
}
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "audit_trail_export__v",
	"job_id": 307579,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-27T20:23:24Z",
	"date_range_start": "2023-05-01",
	"date_range_end": "2023-05-03",
	"specific_users": ["jim.jones@abcpharma.com"]
	}
	}

12.12 Start Study Job - Audit Trail by Site

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-audit-by-site
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **audit_trail_export_by_site__v**
date_range_start	Required		String, but as YYYY-MM-DD date formatted. The day from which the audit results will reflect. The start to end cannot exceed 30 days. If a wider range is necessary, it cannot be started from the API
date_range_end	Optional	(today)	String, but as YYYY-MM-DD date formatted. The day 'up to' audit results will reflect, e.g. <that day> 23:59, end of day. The start to end cannot exceed 30 days. If a wider range is necessary, it cannot be started from the API
specific_sites	Required		The sites (site numbers) to specifically gain audit trail information about
specific_users	Optional	null / no filter on users	JSON array of vault user names to subset the results to. For example: ["joe.smith@abcpharma.com", "mary.jones@abcpharma.com"]

Notes

- The output file from the job is a zip file, with CSVs by subject
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job - no users	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "request": {
      "job_type": "audit_trail_export_by_site__v",
      "date_range_start": "2023-05-01",
      "date_range_end": "2023-05-03",
      "specific_sites": ["101", "102"]
    }
}
```

```
{
    "responseStatus": "SUCCESS",
    "response": {
        "job_type": "audit_trail_export_by_site__v",
        "job_id": 307579,
        "created_by": "eric.emerton@eke.com",
        "created_date": "2022-06-27T20:23:24Z",
        "date_range_start": "2023-05-01",
        "date_range_end": "2023-05-03",
        "specific_users": null,
```

Description / Request (URL)	Response
	"specific_sites": ["101", "102"], } }
Run the Job - with users	

{
"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "audit_trail_export_by_site__v",
"date_range_start": "2023-05-01",
"date_range_end": "2023-05-03",
"specific_sites": ["101", "102"],
"specific_users": ["jim.jones@abcpharma.com"]
}
}
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "audit_trail_export_by_site__v",
	"job_id": 307579,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-27T20:23:24Z",
	"date_range_start": "2023-05-01",
	"date_range_end": "2023-05-03",
	"specific_sites": ["101", "102"]
	"specific_users": ["jim.jones@abcpharma.com"]
	}
	}

12.13 Start Study Job - Audit Trail by Subject

Help Main	https://developer-cdms.veevavault.com/api/23.2/#start-job-audit-by-subject
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/start_now
Parameters	

Name	Req/Opt	Default (when omitted)	Notes
study_name	Required		Name of the study
job_type	Required		For this job type, the value is always **audit_trail_export_by_subject__v**
date_range_start	Required		String, but as YYYY-MM-DD date formatted. The day from which the audit results will reflect. The start to end cannot exceed 30 days. If a wider range is necessary, it cannot be started from the API
date_range_end	Optional	(today)	String, but as YYYY-MM-DD date formatted. The day 'up to' audit results will reflect, e.g. <that day> 23:59, end of day. The start to end cannot exceed 30 days. If a wider range is necessary, it cannot be started from the API
specific_subjects	Required		The subjects specifically gain audit trail information about
specific_users	Optional	null / no filter on users	JSON array of vault user names to subset the results to. For example: ["joe.smith@abcpharma.com", "mary.jones@abcpharma.com"]

Notes

- The output file from the job is a zip file, with CSVs by subject
- When the study job starts, the vault job ID is returned to the caller. The caller then uses that to check job status, and eventually retrieve the file of the job

Examples

Description / Request (URL)	Response
Run the Job - no users	

```
{
    "study_name": "ABCP-2022-01_DEV1",
    "request": {
      "job_type": "audit_trail_export_by_subject__v",
      "date_range_start": "2023-05-01",
      "date_range_end": "2023-05-03",
      "specific_sites": ["101", "102"]
    }
}
```

```
{
    "responseStatus": "SUCCESS",
    "response": {
        "job_type": "audit_trail_export_by_subject__v",
        "job_id": 307579,
        "created_by": "eric.emerton@eke.com",
        "created_date": "2022-06-27T20:23:24Z",
        "date_range_start": "2023-05-01",
        "date_range_end": "2023-05-03",
        "specific_users": null,
```

Description / Request (URL)	Response
	"specific_sites": ["101", "102"], } }
Run the Job - with users	

{
"study_name": "ABCP-2022-01_DEV1",
"request": {
"job_type": "audit_trail_export_by_subject__v",
"date_range_start": "2023-05-01",
"date_range_end": "2023-05-03",
"specific_subjects": ["101-001", "101-002"],
"specific_users": ["jim.jones@abcpharma.com"]
}
}
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "audit_trail_export_by_subject__v",
	"job_id": 307579,
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-27T20:23:24Z",
	"date_range_start": "2023-05-01",
	"date_range_end": "2023-05-03",
	"specific_sites": ["101-001", "101-002"]
	"specific_users": ["jim.jones@abcpharma.com"]
	}
	}

12.14 Retrieve Job Status

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-job-status
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/***{job_id}***
Parameters	**Name** / **Req/Opt** / **Notes** job_id / Required / The vault job ID. This value is embedded in the endpoint / URL. These job IDs are received on the start of a job, or via a query of study jobs.
Notes	• Use this endpoint to determine the current status of a CDMS study job, i.e. waiting for a job to finish. • Only the job types mentioned in the **Jobs / Data Extracts Overview** section of this chapter can use this endpoint.

Possible Job Statuses

Status	API Value	Notes
In Progress	in_progress__v	The job is currently running
Completed	completed__v	The overall job finished. WARNING: This does not mean the job was 100% successful. Once should parse / examine the logs and output files of the job to verify their content and indication of errors for that job type.
Failed	failed__v	The overall job failed. The finer details of the failure are likely in files / logs the job generates.
Canceled	canceled__v	The job was / is canceled
Canceling	canceling__v	An API call was done to cancel the job (see next section), and the job is still in the process of canceling. Once complete, the status will move to canceled__v

Examples

Description / Request (URL)	Response
Get status for a job	

..api/{{version}}/app/cdm/jobs/305610	{
	"responseStatus": "SUCCESS",
	"job_type": "study_data_extract__v",
	"response": {
	"job_id": 305610,
	"study_name": "ABCP-2022-01_DEV1",
	"status": "canceled__v",
	"created_by": "eric.emerton@eke.com",
	"created_date": "2022-06-17T18:32:15Z",
	"last_modified_date": "2022-06-17T18:32:58Z"
	}
	}

12.15 Cancel Job

Help Main	https://developer-cdms.veevavault.com/api/23.2/#cancel-job
Style	**POST**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/***{job_id}***/cancel_now
Parameters	<table><tr><th>Name</th><th>Req/Opt</th><th>Notes</th></tr><tr><td>job_id</td><td>Required</td><td>The vault job ID. This value is embedded in the endpoint / URL. These job IDs are received on the start of a job, or via a query of study jobs.</td></tr></table>
Notes	• Use this endpoint to cancel a CDMS study job that is currently running / in progress • Once the job goes to completed (or canceled), an error will be returned on the attempt • Only the job types mentioned in the **Jobs / Data Extracts Overview** section of this chapter can use this endpoint.

Examples

Description / Request (URL)	Response
Cancel successful	

../api/{{version}}/app/cdm/jobs/305610/cancel_now	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "study_data_extract__v",
	"job_id": 305610,
	"study_name": "ABCP-2022-01_DEV1"
	}
	}

Cancel yields an error	

../api/{{version}}/app/cdm/jobs/305610/cancel_now	{
	"responseStatus": "FAILURE",
	"errorMessage": "[Job] with status [canceled__v] is not cancellable"
	}

12.16 Retrieve Job Output Log

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-job-log
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/***{job_id}***/file/log
Parameters	<table><tr><th>Name</th><th>Req/Opt</th><th>Notes</th></tr><tr><td>job_id</td><td>Required</td><td>The vault job ID. This value is embedded in the endpoint / URL. These job IDs are received on the start of a job, or via a query of study jobs.</td></tr></table>
Notes	• Use this endpoint to retrieve the Vault job log for a CDMS study job • The output is text format and is high level information only. The job type will dictate more warnings / errors in log files it produces (contained in the output file, zip) • Only the job types mentioned in the **Jobs / Data Extracts Overview** section of this chapter can use this endpoint.

Examples

Description / Request (URL)	Response
Job that has status completed	
../api/{{version}}/app/cdm/jobs/305616/file/log	2022-06-17T19:00:40.908Z Starting execution for job 305616 2022-06-17T19:00:44.972Z All chunks for job 305616 processed; beginning aggregation. 2022-06-17T19:00:45.956Z Successfully aggregated completed results for job 305616. 2022-06-17T19:00:46.908Z 2022-06-17T19:00:46.908Z Job Title: AsyncOperation 2022-06-17T19:00:46.909Z Job Type: ASYNC_OPERATION 2022-06-17T19:00:46.909Z Job Subtype: EVENT_PROGRESS_LISTING 2022-06-17T19:00:46.909Z Job Schedule Time: 2022-06-17T19:00:39.000Z 2022-06-17T19:00:46.909Z Job Queue Time: 2022-06-17T19:00:39.000Z 2022-06-17T19:00:46.909Z Job Execution Time: 2022-06-17T19:00:41.000Z 2022-06-17T19:00:46.909Z Job Finish Time: 2022-06-17T19:00:47.000Z 2022-06-17T19:00:46.909Z Job Completion Status: Success (COMPLETED_WITH_SUCCESS)
Job that was canceled	
../api/{{version}}/app/cdm/jobs/305610/file/log	2022-06-17T18:32:48.058Z All chunks for job 305610 processed; beginning aggregation. 2022-06-17T18:32:49.065Z Successfully aggregated completed results for job 305610. 2022-06-17T18:32:49.087Z Aggregation results are likely incomplete due to job 305610 having been canceled; 29 chunks were not processed due to cancellation. 2022-06-17T18:32:51.608Z 2022-06-17T18:32:51.609Z Job Title: AsyncOperation 2022-06-17T18:32:51.609Z Job Type: ASYNC_OPERATION 2022-06-17T18:32:51.609Z Job Subtype: STUDY_DATA_EXTRACT

Description / Request (URL)	Response
	2022-06-17T18:32:51.609Z Job Schedule Time: 2022-06-17T18:32:16.000Z 2022-06-17T18:32:51.609Z Job Queue Time: 2022-06-17T18:32:16.000Z 2022-06-17T18:32:51.609Z Job Execution Time: 2022-06-17T18:32:20.000Z 2022-06-17T18:32:51.610Z Job Finish Time: 2022-06-17T18:32:52.000Z 2022-06-17T18:32:51.610Z Job Completion Status: Cancelled (CANCELLED) 2022-06-17T18:32:51.610Z Job Cancelled by: Eric Emerton (eric.emerton@eke.com) 2022-06-17T18:32:51.610Z Job Cancelled on: 2022-06-17T18:32:32.000Z

12.17 Retrieve Job Output File

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-job-output-file
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/jobs/***{job_id}***/file/content
Parameters	<table><tr><th>Name</th><th>Req/Opt</th><th>Notes</th></tr><tr><td>job_id</td><td>Required</td><td>The vault job ID. This value is embedded in the endpoint / URL. These job IDs are received on the start of a job, or via a query of study jobs.</td></tr></table>
Notes	• Use this endpoint to retrieve the CDMS study job output file, e.g. a zip file of export content • Only a job with status **completed__v** can run this endpoint • **WARNING:** Depending on the job type, additional logs could be included in the output zip file, with indications of warnings and/or failures. Always read these files for true status of the job • Only the job types mentioned in the **Jobs / Data Extracts Overview** section of this chapter can use this endpoint.

Examples

Description / Request (URL)	Response
Get of job output file	
`../api/{{version}}/app/cdm/jobs/305510/file/content`	(not shown, the stream of a zip file, typically)

13 Users

13.1 Retrieve Users

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-users
Style	
Endpoint	<your Vault URL>/api/v23.2/app/cdm/users
Parameters	

Name	Req/Opt	Notes
study_name	Optional	Name of the study. This can be omitted, and all users the API caller has rights to are returned
user_names	Optional	List specific users to return, the user name in <user>@<domain>.com format.. Separate multiple by comma
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- User to retrieve information about users in the vault as they relate to studies in the vault
- The top level of each user / entry returned is Vault account properties. An interior section of the return is itself a JSON array of study access that the user has rights for.
- The return **will** include all **vault owners** since those users are on every study.
- Refer to the **Return Parameter Notes** table after the examples for detailed information on each property.

Examples

Description / Request (URL)	Response
Many Users (multiple studies)	
../app/cdm/users	

```
{
    "responseStatus": "SUCCESS",
    "responseDetails": {
        "limit": 1000,
        "offset": 0,
        "size": 17,
        "total": 17
    },
    "vault_id": 1004329,
    "users": [
        {
            "user_id": "164737",
            "user_name": "alt_sys_user@eke.com",
```

Description / Request (URL)	Response

	"user_email": "eric.emerton@veeva.com",
	"user_title": "",
	"user_last_name": "Sys User",
	"user_first_name": "Alt",
	"company": "",
	"federated_id": "",
	"user_language": "en",
	"user_locale": "en_US",
	"user_timezone": "(GMT-05:00) Eastern Standard Time (America/New_York)",
	"security_policy": "Basic",
	"activation_date": "2020-09-29",
	"created_date": "2020-09-29T17:26:41Z",
	"last_modified_date": "2021-02-02T01:06:02Z",
	"principal_investigator": false,
	"active": true,
	"vault_owner": false,
	"all_studies_access": false,
	"studies": [
	{
	"study_environment": "Labrinone-DM2_DEV1",
	"study_role": "CDMS Lead Data Manager",
	"study_access": "Enabled",
	"all_sites_access": true,
	"lms_training_status": "",
	"ignore_lms_training_status": false
	}
	]
	}
	
	:
	:
	:
	:
	]
	}

Users of one study	

../app/cdm/users?study_name=ABCP-2022-01_DEV1	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 6,
	"total": 6
	},
	"vault_id": 1004329,
	"users": [
	{

Description / Request (URL)	Response

	"user_id": "96483",
	"user_name": "dm_test_user@eke.com",
	"user_email": "eric.emerton@veeva.com",
	"user_title": "",
	"user_last_name": "DM",
	"user_first_name": "Test User",
	"company": "",
	"federated_id": "",
	"user_language": "en",
	"user_locale": "en_US",
	"user_timezone": "(GMT-05:00) Eastern Standard Time (America/Indianapolis)",
	"security_policy": "Basic",
	"activation_date": "2022-06-28",
	"created_date": "2018-07-23T19:28:20Z",
	"last_modified_date": "2022-06-28T13:41:42Z",
	"principal_investigator": false,
	"active": true,
	"vault_owner": false,
	"all_studies_access": false,
	"studies": [
	{
	"study_environment": "ABCP-2022-01_DEV1",
	"study_role": "CDMS Lead Data Manager",
	"study_access": "Enabled",
	"all_sites_access": true,
	"lms_training_status": "",
	"ignore_lms_training_status": false
	}
	]
	},
	:
	:
	:
	:
	{
	"user_id": "92677",
	"user_name": "eric.emerton@eke.com",
	"user_email": "eric.emerton@veeva.com",
	"user_title": "",
	"user_last_name": "Emerton",
	"user_first_name": "Eric",
	"company": "",
	"federated_id": "",
	"user_language": "en",
	"user_locale": "en_US",
	"user_timezone": "(GMT-05:00) Eastern Standard Time (America/New_York)",
	"security_policy": "Basic",
	"activation_date": "",

Description / Request (URL)	Response
	"created_date": "2018-02-12T21:07:25Z", "last_modified_date": "2021-03-26T03:13:09Z", "principal_investigator": false, "active": true, "vault_owner": true, "all_studies_access": false }] }
Single user who is a vault owner (thus access to all studies, studies array omitted)	

../app/cdm/users?user_names=eric.emerton@eke.com	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"vault_id": 1004329,
	"users": [
	{
	"user_id": "92677",
	"user_name": "eric.emerton@eke.com",
	"user_email": "eric.emerton@veeva.com",
	"user_title": "",
	"user_last_name": "Emerton",
	"user_first_name": "Eric",
	"company": "",
	"federated_id": "",
	"user_language": "en",
	"user_locale": "en_US",
	"user_timezone": "(GMT-05:00) Eastern Standard Time (America/New_York)",
	"security_policy": "Basic",
	"activation_date": "",
	"created_date": "2018-02-12T21:07:25Z",
	"last_modified_date": "2021-03-26T03:13:09Z",
	"principal_investigator": false,
	"active": true,
	"vault_owner": true,
	"all_studies_access": false
	}
	]
	}

Single user with multiple study access	
../app/cdm/users?user_names=mia.st	{

Description / Request (URL)	Response

one@eke.com	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 1,
	"total": 1
	},
	"vault_id": 1004329,
	"users": [
	{
	"user_id": "92876",
	"user_name": "mia.stone@eke.com",
	"user_email": "eric.emerton@veeva.com",
	"user_title": "",
	"user_last_name": "Stone",
	"user_first_name": "Mia",
	"company": "",
	"federated_id": "",
	"user_language": "en",
	"user_locale": "en_US",
	"user_timezone": "(GMT-05:00) Eastern Standard Time (America/New_York)",
	"security_policy": "Basic",
	"activation_date": "",
	"created_date": "2018-02-12T23:21:15Z",
	"last_modified_date": "2021-02-02T01:06:02Z",
	"principal investigator": false,
	"active": true,
	"vault_owner": false,
	"all_studies_access": false,
	"studies": [
	{
	"study_environment": "Labrinone1_DEV1",
	"study_role": "CDMS Clinical Research Associate",
	"study_access": "Enabled",
	"site_access": "",
	"country_access": "United States",
	"lms_training_status": "",
	"ignore_lms_training_status": false
	},
	{
	"study_environment": "Labrinone2_DEV1",
	"study_role": "CDMS Lead Data Manager",
	"study_access": "Enabled",
	"site_access": "US-103,CA-101,CA-102,CA-103,UK-102,UK-103"
	"country_access": "",
	"lms_training_status": "",
	"ignore_lms_training_status": false
	},

Description / Request (URL)	Response

	{
	"study_environment": "Labrinone3_DEV1",
	"study_role": "CDMS Lead Data Manager",
	"study_access": "Enabled",
	"site_access": ""
	"country_access": "",
	"lms_training_status": "",
	"ignore_lms_training_status": false
	},
	{
	"study_environment": "Labrinone4_DEV1",
	"study_role": "CDMS Lead Data Manager",
	"study_access": "Enabled",
	"all_sites_access": true,
	"lms_training_status": "",
	"ignore_lms_training_status": false
	}
	]
	}
	]
	}

Return Parameter Notes

Location	Type	Notes
responseStatus	String	
responseDetails	Section	
responseStatus/limit	Integer	When paging involved, the limit of each return
responseStatus/offset	Integer	When paging involved, the offset of the current return
responseStatus/size	Integer	The size of the current return
responseStatus/total	Integer	The total (outside of any paging) of the query
vault_id	Integer	The Vault ID
users	Array	An entry per user of the return
users/user_id	String	Value is across all vaults / domains
users/user_name	String	E.g. eric.emerton@eke.com
users/user_email	String	

Location	Type	Notes
users/user_title	String	
users/user_last_name	String	
users/user_first_name	String	
users/company	String	
users/federated_id	String	This value is the user name in a system the user is using SSO for to login to the vault. The security policy must be set appropriately for this value to line up. (multiple SSO policies can reside in one vault)
users/user_language	String	E.g. en, fr, de, etc.
users/user_locale	String	E.g. en_US, en_AU, etc.
users/user_timezone	String	Full label of the user's timezone
users/security_policy	String	The security policy name value
users/activation_date	String (as Date)	If there is an activation date, shown as yyyy-MM-dd format. Otherwise **omitted**
users/created_date	String	Format yyyy-MM-ddThh:ss:mmZ, UTC date time
users/last_modified_date	String	Format yyyy-MM-ddThh:ss:mmZ, UTC date time
users/principal_investigator	Boolean	When choosing 'Add as Principal Investigator' from the UI, a user can also be a PI for tagging to a specific site.
users/active	Boolean	I.e. if the user is active in the vault (no specific study)
users/vault_owner	Boolean	If the user is a vault owner, they have access to all studies (need no specific study access). These users returned will not have a user/studies JSON array of entries
users/all_studies_access	Boolean	When it is true access to all existing and future studies of the vault
users/studies	Array node	Vault owner users have this **omitted**, i.e. since access to all studies is implied
users/studies/study_environment	String	The Study Instance label, e.g. ABC-2022-01_DEV1
users/studies/study_role	String	The study role name, i.e. 'for that study'
users/studies/study_access	String	Values of **Enabled** or **Disabled**
users/studies/all_sites_access	Boolean	When **true,** the user has access to all sites. If **false**, **omitted** from return.
users/studies/site_access	String	Comma list of sites the user has access to
users/studies/country_access	String	Comma list of study counties for the user, if not specific site access. That is, the sites of those countries.
users/studies/lms_training_status	String	Values are empty, **Trained** or **Not Trained**
users/studies/ignore_lms_training_status	Boolean	When this value is **true**, the LMS training status on that study is ignored. That is, the user is allowed into the study per this flag

13.2 Upload Users

Help Main	https://developer-cdms.veevavault.com/api/23.2/#upload-users
Style	**PUT**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/users
Parameters	<table><tr><th>Name</th><th>Req/Opt</th><th>Notes</th></tr><tr><td>import_file</td><td>Required</td><td>CSV file. Includes header line, and a row per user to action on. One line can be multiple studies (e.g. UAT vault). See CDMS Help for full details on the structure of the file, plus latest template</td></tr><tr><td>append_study_country_access</td><td>Optional</td><td></td></tr></table>

Notes	• This endpoint is used to create or update users
	• Each row is a user to make updates (or create)
	• See CDMS Help for full details on the structure of the file, plus latest template
	• For deactivation at a study level, the endpoint is used with specific **'Disabled'** value in the Study Access column.
	• Vault or domain activation or deactivation - see the next few sections
	• The CSV attempted is checked for:
	  ○ Correct column header names
	  ○ Values in each cell that comply with checks
	  ○ If **ANY** of the rows fail, the return response will enumerate those rows with issues. No job starts in such cases
	• **WARNING**: The CSV template can change from release to release as new properties are introduced. If some of the new properties are required, this could upend existing built integrations. The API version does **NOT** refer back and use older CSV templates. Consult the documentation and experiment in pre release vaults on coming releases
	• Once a job successful starts, the job ID is returned, and this endpoint:
	
	<your Vault URL>/api/v23.2/services/jobs/***{job_id}***
	
	.. can be used to check for the status of the job. Once the job completes, consider using **Retrieve Users** to verify the state of each of the users created and/or updated.

Examples

Description / Request (URL)	Response
CSV attempted is valid, job starts	

…/api/v23.2/app/cdm/users?append_study_country_access=false
 	
(with content/type = text/csv and file passed in **import_file** parameter)
	{
	"responseStatus": "SUCCESS",
	"response": {
	"job_type": "EDC Import",

Description / Request (URL)	Response
	"job_id": 446208, "status": "Queued", "created_by": "user.admin@username.com", "created_date": "2021-08-16T12:14:42Z" } }
Attempt where there are issues in the CSV	

…/api/v23.2/app/cdm/users?append_study_country_access=false
 	
(with content/type = text/csv and file passed in **import_file** parameter)
	{
	"responseStatus": "FAILURE",
	"responseDetails": {
	"rows": 1,
	"ready": 0,
	"warning": 0,
	"error": 1,
	"limit": 100
	},
	"errors": [
	{
	"errorMessage": "Error: Ignore LMS Status [Maybe] does not exist, Study Access [Enabledd] does not exist, Role [CDMS Principal Investigatorr] does not exist",
	"User Name": "test_api_1@eke.com",
	"Study Role": "CDMS Principal Investigatorr",
	"Ignore LMS Status": "Maybe",
	"Study Access": "Enabledd"
	}
	]
	}

13.3 Inactivate User – Vault or Domain Level

Help Main	https://developer-cdms.veevavault.com/api/23.2/#inactivate-user
Style	**DELETE**
Endpoint	<your Vault URL>/api/v23.2/objects/users/***{user_id}***
Parameters	

Name	Req/Opt	Notes
user_id	Required	The Vault user ID.
domain	Optional	URL parameter, true/false. When omitted the default is **false**.

Notes

- Use this endpoint **ONLY** to inactivate a user account, vault or domain wise
- For the deactivation of just a **specific** study, use the **Upload Users** endpoint, but with a line for the user indicating a **Disabled** status.
- **WARNING**: This endpoint with **domain=true** will inactivate the user across **ALL** vaults they otherwise have access into. The use of domain=false will inactivate the user in just the vault targeted. (all studies in that vault).
- **TIP:** Later a user can be reactivated. Consider leaving a user's study access intact, so that a simple reactivation later can return the user to all appropriate study access rights.

Examples

Description / Request (URL)	Response
Inactivate successful - just the target vault	
..api/v23.2/objects/users/1234567	{ "responseStatus": "SUCCESS", "id": 1234567 }
Inactivate successful - **domain** level (ALL vaults on that domain)	
..api/v23.2/objects/users/1234567?domain=true	{ "responseStatus": "SUCCESS", "id": 1234567 }
Bad User ID	
..api/v23.2/objects/users/1234599	{ "responseStatus": "FAILURE", "errors": [{ "type": "INVALID_DATA", "message": "User [1234599] not found"

Description / Request (URL)	Response
	}] }

13.4 Activate User – Domain Level

Help Main	https://developer-cdms.veevavault.com/api/23.2/#activate-users (from the main vault endpoint for update a user, at vault level) - https://developer.veevavault.com/api/23.2/#update-users)
Style	**PUT**
Endpoint	<your Vault URL>/api/v23.2/objects/users/***{user_id}***
Parameters	

Name	Req/Opt	Notes
user_id	Required	The Vault user ID, as part of the endpoint
domain_active__v	Required	**Encoded** parameter on the action only. Value = **true**

Notes	• Use this endpoint **ONLY** to activate a user account that is currently inactive on the domain (all vaults in the domain) • Only a domain admin can perform this action. The API caller must have that access on the domain to perform. • This action must be performed first, prior to more actions to activate in specific vaults, then more to activate specific studies (where necessary)

Examples

Description / Request (URL)	Response
Active on domain successful	
..api/v23.2/objects/users/1234567 (with encoded parameter **domain_active__v = true**)	{ "responseStatus": "SUCCESS", "id": 1234567 }
Bad User ID	
..api/v23.2/objects/users/1234599	{ "responseStatus": "FAILURE", "errors": [{ "type": "INVALID_DATA", "message": "User [1234599] not found" }] }

13.5 Activate User – Vault Level

Help Main	https://developer-cdms.veevavault.com/api/23.2/#activate-users (from the main vault endpoint for update a user, at vault level) - https://developer.veevavault.com/api/23.2/#update-vault-membership)
Style	**PUT**
Endpoint	<your Vault URL>/api/v23.2/objects/users/***{user_id}***/vault_membership/***{vault_id}***
Parameters	

Name	Req/Opt	Notes
user_id	Required	The Vault user ID, as part of the endpoint
vault_id	Required	The Vault ID to be activated, as part of the endpoint
active__v	Required	**Encoded** parameter on the action only. Value = **true**

Notes	• Use this endpoint **ONLY** to activate a user account that is currently inactive on a specific vault, and the account is to be activated on that vault only. • This action must be performed first, prior to specific study activations (where necessary)

Examples

Description / Request (URL)	Response
Active on vault successful	
`..api/v23.2/objects/users/1234567/vault_membership/10043299` (with encoded parameter **active__v = true**)	`{ "responseStatus": "SUCCESS" }`
Bad User ID	
`..api/v23.2/objects/users/1234599/vault_membership/10043299`	`{ "responseStatus": "FAILURE", "errors": [ { "type": "INVALID_DATA", "message": "User [1234599] not found" } ] }`

14 Study Design

14.1 Design Overview

The study design endpoints started at release **22R2**, and additional will be released going forward. The primary use case is for programmatic parsing of a study's design, similar to CDISC ODM **xml** files. The plan for Vault CDMS is to release APIs that can retrieve that similar representation of a study's design, by casebook version (file per), but initially in JSON file format (Vault platform's primary format).

Studies are designed using design level components that mirror the data levels:

- **Casebook Version Definition**
- .. then.. -> **Event Group Definition**
- .. then.. -> **Event Definition**
- .. then.. -> **Form Definition**
- .. then.. -> **Item Group Definition**
- .. then.. -> **Item Definition**
- …then.. -> Codelist / Unit Codelist Definitions (used by dropdown Item definitions)

Each casebook version yields a schedule of these components, i.e. what is in use at the various levels. Properties like 'repeating', labels, short labels, etc. (seen in the Studio SDS) are included at all levels.

Currently, the Vault CDMS Studio module allows for export of a Study Design Specification (SDS), plus annotated workbooks PDFs - by casebook version. The SDS is an Excel workbook and could be parsed for all the same design information, but programmatic retrieval of these is not possible, and studies get amendments / new casebook versions often. Further, the programmatic parsing of Excel workbooks can be risky as compared to the same information in JSON (or XML) format.

14.2 Retrieve Casebook Versions

Similar to the online help, this is noted here only as a pointer to the existing **Studies -> Retrieve Studies** endpoint. As of 22R2 release, it includes the casebook definitions in the study..

14.3 Retrieve Coding Definitions

Help Main	https://developer-cdms.veevavault.com/api/23.2/#retrieve-coding-definitions
Style	**GET**
Endpoint	<your Vault URL>/api/v23.2/app/cdm/coder/forms
Parameters	

Name	Req/Opt	Notes
study_name	Optional	Name of the study. This can be omitted, and all users the API caller has rights to are returned
limit	Optional	Pagination API - different limit from the default 1000 can be used
offset	Optional	Pagination API - the offset of the current page, if the response is to cross multiple pages. Example: 1750 records in query, 0 thru 999 (zero based index) in 1st 'page', then 1000 to 1749 in the 2nd

Notes

- Used to retrieve the list of medical coding forms, i.e. those tagged to use Vault CDMS Coder. Medical coding requests are added on the submit of such forms
- The coding definition includes the item definition being coded (e.g. AE verbatim, DM drug name), plus other properties from the form (if the study design maps them)
- With this information, one can then use the response information to obtain information from the Medical Coding requests and queries of the study, that is, 'of' that definition.

Examples

Description / Request (URL)	Response
Get Coding Form Definitions of a Study	

…/api/v23.2/app/cdm/coder/forms?study_name=ABCP-2022-01_DEV1	{
	"responseStatus": "SUCCESS",
	"responseDetails": {
	"limit": 1000,
	"offset": 0,
	"size": 3,
	"total": 3
	},
	"forms": [
	{
	"form_name": "AE",
	"form_type": "ae__v",
	"form_definition_status": "active__v",
	"form_coding_status": "active__v",
	"dictionary_definition": "MedDRA",
	"dictionary_release": "MedDRA_25_1",
	"coding_item_definition_id": "V0T000000002001",
	"coding_item_definition_name": "VV-000004"
	},
	{
	"form_name": "MULTI_CODING",
	"form_type": "other__v",
	"form_type_other_label": "My Other Label Here",
	"form_definition_status": "active__v",
	"form_coding_status": "active__v",
	"dictionary_definition": "MedDRA",
	"dictionary_release": "MedDRA_25_1",
	"coding_item_definition_id": "V0T000000003001",
	"coding_item_definition_name": "VV-000005"
	},
	{
	"form_name": "Concomitant-Medication",
	"form_type": "conmed__v",
	"form_definition_status": "active__v",
	"form_coding_status": "active__v",
	"dictionary_definition": "WHODrug C3",
	"dictionary_release": "GLOBALC3Mar22",
	"coding_item_definition_id": "V0T000000004001",
	"coding_item_definition_name": "VV-000006"
	}
	]
	}

15 Best Practices / Tips

Area	Best Practice

Error Detection	Watch the 'inner' vs. 'outer' success/fail statuses in API response. The Vault API is designed such that most API endpoints all multiple actions of that type in the same call. As such, the status of each entry in the request is embedded at the inner level. The outer **responseStatus** is largely an indication that 'yes, you reached the server, and it performed an action'. The example below is the attempt to add two event groups, where one succeeds, one fails. Note the inner **responseStatus** for each, with overall outer **responseStatus**
	
	{
	"responseStatus": "**SUCCESS**",
	"eventgroups": [
	{
	"responseStatus": "**SUCCESS**",
	"study_country": "United States",
	"site": "101",
	"subject": "101-001",
	"eventgroup_name": "egIRT_INFO",
	"eventgroup_sequence": 1
	},
	{
	"responseStatus": "**FAILURE**",
	"errorMessage": "[Subject] with name [101-021] not found"
	"study_country": "United States",
	"site": "101",
	"subject": "101-021",
	"eventgroup_name": "egIRT_INFO"
	}
	]
	}

Error Detection	If creating an integration into Vault CDMS, what is your error detection overall strategy? ● Do you examine each response for success before moving on to a sequential / next call ● What sort of alerting / process kicks off when there is an error? How do you avoid things falling through the cracks? ● What about the mistake / update scenarios? What happens when your source data changes, mistake or otherwise, how do you push the data in, where an update might have a different course of action from the initial add?

Area	Best Practice
Study Design	For an inbound integration to Vault CDMS: ● If possible, **avoid** form designs that involve **both** user entered data and integrated data. ● If the data is semi-consistent from the upstream system from Vault CDMS, consider a template of forms, 100% read only that can be reused study to study.
Study Design	A repeating visit in Vault CDMS increments the **eventgroup_sequence** values (1, 2, .. etc). Although there is an event_sequence property, current system design yields that as a **1**, always. The event group level is used for both single repeating events (e.g. Unscheduled), or series of events (e.g. Day 1, Day 8, Day 15.. but by Cycle)
API Account	Try to follow a path for the API account with a Vault Security Policy with setting 'No Password Expiration'. In this way, a recurring integration is not at risk of having an expired password upend the push or pull of important information.
API Account	An API user is no different from any other study user. Typically, users must go through / pass a training before their study access is truly enabled. For an API / system user, ensure to check the **Ignore LMS Status, Assume Trained** attribute on the account (typically). Otherwise the API user won't find the study (or studies) intended. The action is not necessary if the specific Vault is not activated to required LMS training before study access is granted.
Inspecting Data	Strive to inspect the existing forms / events before attempting an action to push data into the study. Does the subject even exist? Does the target area of data (form, event group, etc) exist?
Inspecting Data	If a form is submitted, it must first be opened for edit via the **Edit Submitted Form** API endpoint, Edit Form (later section), before proceeding with the update of data. Currently there is no parameter to allow for conditional open for edit, during the call to update data on a form, not a parameter to additionally submit the form once data is updated/added.
Create vs Upsert	Various API endpoints started as specific create actions, with later **PUT** versions performing an upsert of the entity (event group, form, item group, etc). The upsert option is a better option, since specific sequences can be indicated at the various design levels, with the result being either an add (if does not exist) or a skipped action. Update '2nd time in' scenarios benefit from this approach as the same sequence of API calls can typically be used.
Sequences	The various design levels of a study - event group, form, item group - can repeat, or not repeat. When the do not repeat the Create / Upsert endpoints do not require the specific indication of, say: : "eventgroup._sequence": 1 : in the request body. That said, consider always including these regardless, as it makes for a more consistent request/response match

<table>
<tr><th>Area</th><th>Best Practice</th></tr>
<tr><td>Locked / Frozen</td><td>Various levels of locked and frozen statuses in turn affect ability to push data into Vault CDMS:
<table>
<tr><th>Area</th><th>Status</th><th>Add/Update Data</th><th>Add/Update Queries</th></tr>
<tr><td>Study</td><td>Locked</td><td>Disallowed</td><td>Disallowed</td></tr>
<tr><td>Site</td><td>Locked</td><td>Disallowed</td><td>Disallowed</td></tr>
<tr><td>Subject</td><td>Locked</td><td>Disallowed</td><td>Disallowed</td></tr>
<tr><td>Event</td><td>Locked</td><td>Disallowed</td><td>Disallowed</td></tr>
<tr><td>Event</td><td>Frozen</td><td>Disallowed (event date changes)</td><td>Allowed (on event date)</td></tr>
<tr><td>Form</td><td>Locked</td><td>Disallowed</td><td>Disallowed</td></tr>
<tr><td>Form</td><td>Frozen</td><td>Disallowed</td><td>Allowed</td></tr>
</table>
Frozen and Locked are not automatable through the API, by design. These were/are human decisions to stop actions from happening.</td></tr>
<tr><td>Change Reasons</td><td>For the update of a form data, a change reason is only used when there is an update/change to existing values, after there has been at least one submit of the form. Change reasons can be included for the initial set of data, but they are ignored, instead the default ‘changes before submission’ is used. That said, it is easier to send your change reason with all form updates. In this way you don’t have to track necessarily that it's the 1st or later touch of the form data.</td></tr>
<tr><td>Jobs</td><td>The Vault CDMS job types that allow start / inspect / retrieve output follow the Vault platform job flow. That is, a job of Completed status might not necessarily not have had any issues. Depending on the job type, more detailed log style information is usually included in the output. Both the Vault job log and the content of the job’s output should be inspected.</td></tr>
<tr><td>User Administration</td><td>For updating of users with a CDMS vault, ensure the proper usage depending on the need:
(1) For full deactivation of an account, this will remove the user from all vaults (thus all studies in those vaults) on that domain. Reactivation of an account is later (if needed) a two step process. (update of domain status, then update of vault memberships)
(2) For deactivation of an account at the vault level, this will remove the user from any studies they otherwise would have had access to, in that vault
(3) For study access deactivation -> use the upload users endpoint, with a line indicating Study Status = Disabled, to remove access to a single study. Specific site / country access does not need to be removed, as later a re-activation in the study might happen, returning the user to the state they were at deactivation in the study.</td></tr>
<tr><td>User Administration</td><td>The add/update of users in the vault involves the pass of a CSV of user information in the same way as the Vault CDMS Users UI. The CSV template can change from release to release as new properties are introduced. If some of the new properties are required, this could upend existing built integrations. The API version does NOT refer back and use older CSV templates. Consult the CDMS Help and experiment in pre release vaults on coming releases when writing user administration integrations.</td></tr>
</table>