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## Timetable

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### Overview

The Timetable product integration allows students, lecturers, and other users of the app to view their schedule or list of calendar events for the day, week, month, and year through the app using their mobile devices or PCs.

Note that this product integration requires Ex Libris teamwork. Please submit a Support ticket for full configuration. See more information in the [Configuration](#) section.

For more information, watch [Timetable Part 1](#) (3:16 min) and [Timetable Part 2](#) (5:27 min).

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### Vendors

Timetable feeds can be retrieved with Celcat, Ellucian Banner, Ellucian Colleague (custom), MyTimetable (Semestry), Oracle PeopleSoft, Databee Exams Manager, Google Calendars, Microsoft Graph API (Calendars) and RESTful APIs.

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#### Note

All-Day and Multi-Day events in the calendar are fully supported only for the RESTful API and Microsoft Graph API vendors.

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It is possible to have multiple Timetable feeds, which can have different formats (for example, two MyTimetable feeds and one Banner feed) with different configurations accordingly.

The user can configure whether the feeds are blended or not.

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### User Experience

The following section describes information relating to the user experience for the Timetable product integration.

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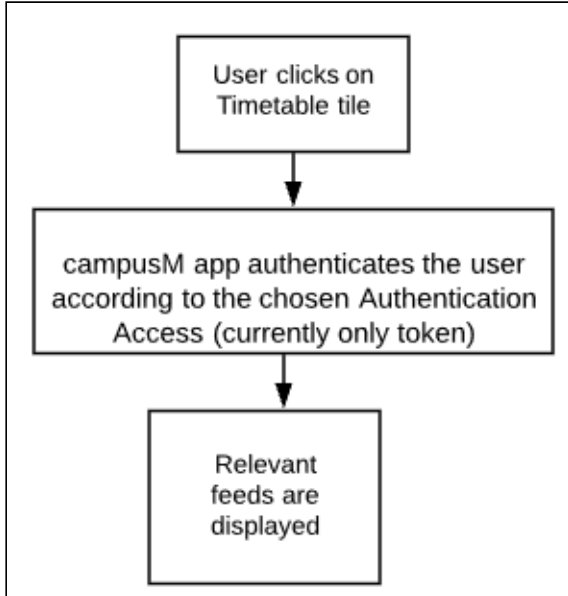
#### User Activities

- Users can see their events from multiple Timetable feeds.
- Users can select specific Timetable feeds to view.
- Users can see a list of events in a daily, weekly, or monthly view.
- Users can see the following details about a specific event: Start Time, End Time, Location information, etc.
- Users can select the option to display a blended view.

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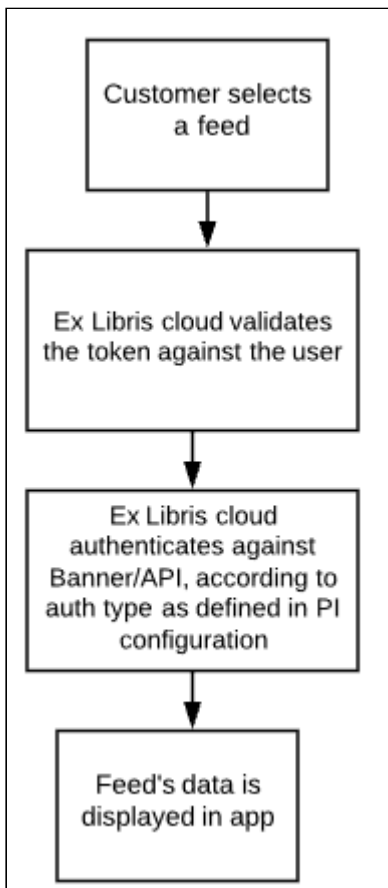
## User Flow Diagram

The following diagram describes the workflow to display the user's feeds:



### User's Feeds Diagram

The following diagram describes the workflow to display the user feed's data:



### User Feed's Data Diagram

## Authentication

Users do not need to fill in their authentication credentials at any stage. See the authentication workflow that occurs behind the scenes in the [Technical Flow Diagram](#) section.

## Offline Support

If the user is logged into the app when they go offline, the last timetable information received by the app is cached, and the user can see this data in the calendar. The calendar can be opened offline from the navigation bar at the bottom of the app. If the homepage was cached before the user went offline, tiles in the homepage can also be used to access the calendar.

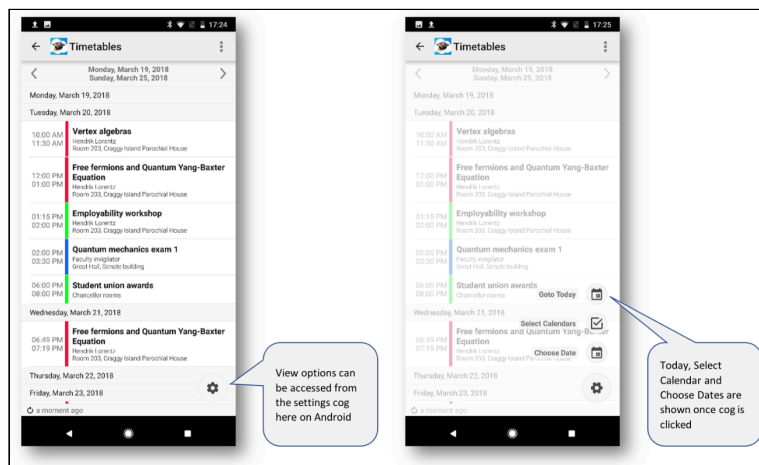
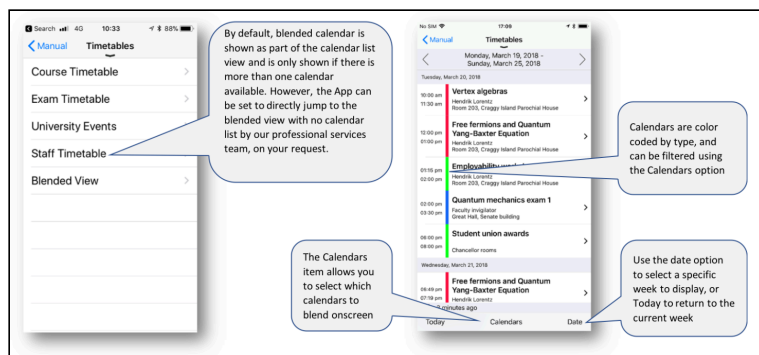
## Screenshots

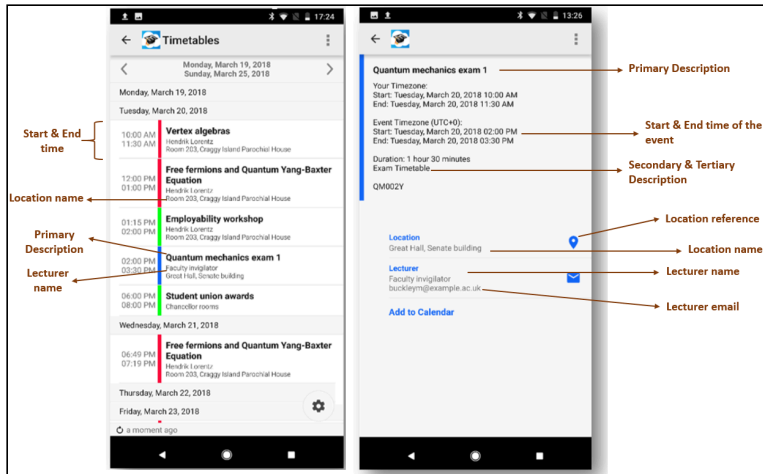
The following is an overview of the Timetable product integration user interface for a reference when configuring it.

## Blended Calendar View

### Note

This section describes the legacy calendar feature for mobile platforms. For information about the React Native UI, see [Feature Focus – My Calendar](#).

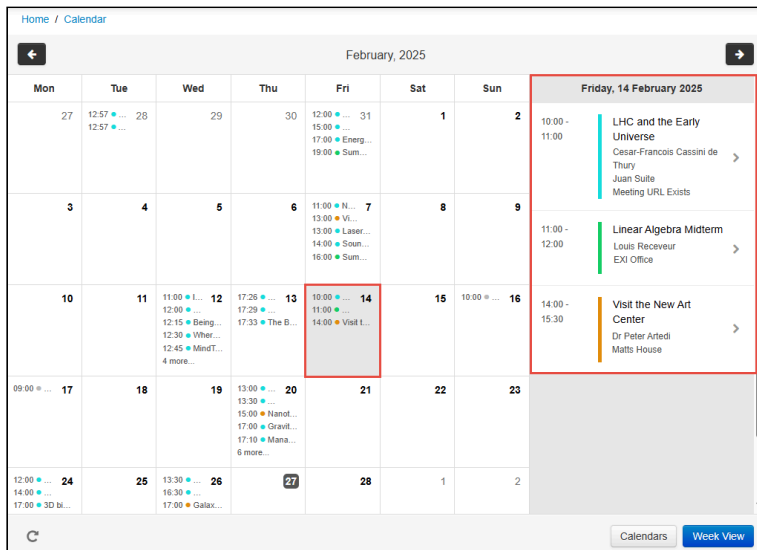




## Web Calendar View

Two views are available for the web calendar:

- **Week view** – Lists the activities scheduled for the selected week, in an Agenda-type view. Select an item in the list to open additional details.
- **Month view** – Shows the month as a grid, with the scheduled for each day listed in the square representing that day. Select a day in the calendar grid to view details about the scheduled activities of that day in a pane on the right. Select an item in the list to open additional details.



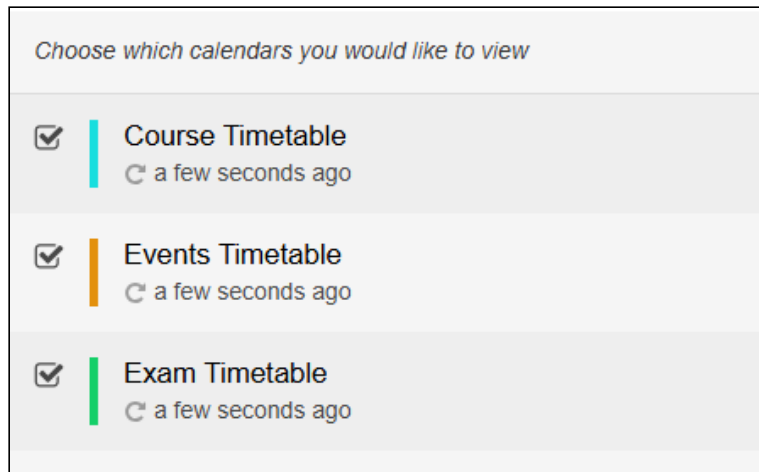
Web calendar in Month View, with a Day Selected and Its Details Shown on the Right

To switch between views:

- At the bottom right, select the **Week View/Month View** button.

To select which timetables to include in the calendar display:

1. At the bottom right, select the **Calendars** button. A list of the available timetable feeds opens.



2. Select the checkbox of each timetable you want to display in the calendar.
3. Use the browser's **Back** button to return to the calendar.

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## Technical Overview

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### Prerequisites

- The **eventRef** field of every event *must* be unique in order for the integration to work properly.
- CMAuth configured Profile Registration Authentication (**App Manager > App Settings > Profile Registration Authentication**)
- CMAuth configured Authentication Access (**App Manager > App Settings > Authentication Access**)
- Timetable feeds should be provided by one of the following:
  - CelCat APIs
  - Ellucian Banner APIs
  - Ellucian Colleague (custom) APIs
  - Ellucian Colleague (Web API)
  - MyTimetable APIs
  - Oracle PeopleSoft APIs
  - Databee Exams Manager
  - Google Calendar
  - Microsoft Graph API (Calendars)
  - RESTful API which provides timetable feed in one of the following formats:
    - JSON
    - XML
    - iCal
- To avoid case-sensitivity issues later down the line, lecturer email addresses should be lowercase.

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### Required Format

Select one of the following links for the required format for that vendor:

- [Required Format for Celcat Vendor](#)

- [Required Format for Oracle PeopleSoft Vendor](#)
- [Required Format for RESTful API Vendor](#)
- [Required Format for Banner Vendor](#)
- [Required Format for My Timetable \(Semestry\) Vendor](#)
- [Required Format for Ellucian Colleague \(Custom\) Vendor](#)
- [Required Format for Ellucian Colleague \(Web API\) Vendor](#)
- [Required Format for Databee Exams Manager Vendor](#)
- [Required Format for Google Vendor](#)
- [Required Format for Microsoft Graph API \(Microsoft Calendar\)](#)

**Note**

For all attendance timetables, the Location Code (locCode) value must not exceed 100 characters in length.

## Celcat Vendor

campusM uses the following Celcat APIs:

GET /api/students – The parameters and headers passed into this API are all set within the configuration page.

GET /api/events?studentId={{user\_input\_identifier}} – This returns the timetable data for the user.

## Oracle PeopleSoft Vendor

The table below includes the relevant fields from PeopleSoft. Ensure that you are using the correct fields when building the query.

The Timetable query is prompted by **USER\_ID**, **START**, and **END**, and returns the class/course meeting information:

Internal campusM Field Name	PeopleSoft Field Name
eventRef	Concat of fields from CLASS_TBL & CLASS_MTG to create a unique non-changing reference value. This value is then used to return the attendees in the retrieve attendees integration
desc1	Concat SUBJECT-CATALOG_NBR-CLASS_SECTION-DESCR from CLASS_TBL
desc2	Concat SUBJECT-CATALOG_NBR-CLASS_SECTION-CAMPUS_EVENT_NBR from CLASS_TBL and CAMPUS_MTG
desc3	Concat SUBJECT-CATALOG_NBR-CLASS_SECTION from CLASS_TBL

Internal campusM Field Name	PeopleSoft Field Name
start	Concat MEETING_DT+MEETING_TIME_START from CAMPUS_MTG
end	Concat MEETING_DT+MEETING_TIME_END from CAMPUS_MTG
teacher_name	from CLASS_INSTR
teacher_email	from EMAIL_ADDRESSES
loc_code	FACILITY_ID from CAMPUS_MTG
loc_add1	ROOM from FACILITY_TBL
Descr	DESCR from BLDG_TBL

campusM uses the following API:

Get `https://{URL for Timetable PeopleSoft Query}`

`isconnectedquery=n`

`maxrows=0`

`prompt_uniquepromptname=USER_ID,START,END`

`prompt_fieldvalue={example: ExampleStudentUsername,2020-04-06,2020-04-13}`

`json_resp=true`

The parameters and headers passed into this API are all set in the configuration page. Note that **USER\_ID**, **START**, and **END** should be added to the configuration page as separate query parameters. The back end handles concatenating these together for **prompt\_uniquepromptname** and generates the value for **prompt\_fieldvalue**, which are the actual query parameters used in the request for PeopleSoft, as seen in the example above. The names used for **USER\_ID**, **START**, and **END** are flexible, e.g., **USER\_ID** could be **EMPLID** instead, etc., but all other parameters are expected to be the exact names listed here, i.e., **isconnectedquery**, **maxrows**, and **json\_resp**. The "Prompt Param" configuration field should only be checked true for **USER\_ID**, **START**, and **END**. Another important thing to note is that query-parameter order matters, so you must have them in the correct order in the configuration.

The response must use the following format. campusM expects the names of the row attributes to match those in this example.

```

{
  "status": "success",
  "data": {
    "query": {
      "numrows": 2,
      "queryname=": "CAMPUSM_TIMETABLE",
      "rows": [
        {
          "attr:rownumber": 1,
          "EVENT_REF": "9",
          "DESC1": "Multiplatform Content Creation",
          "DESC2": "COM",
          "DESC3": "COM-200-01",
          "START": "2020-04-06T12:00:00-0700",
          "END": "2020-04-06T14:50:00-0700",
          "TEACHER_NAME": "Dianne Dianne",
          "TEACHER_EMAIL": "do\_not\_reply@campus.edu",
          "LOC_CODE": "ANM1-259",
          "LOC_ADD1": "259",
          "LOC_ADD2": "79 New"
        },
        {
          "attr:rownumber": 2,
          "EVENT_REF": "25",
          "DESC1": "Multiplatform Content Live",
          "DESC2": "COM",
          "DESC3": "COM-210-01",
          "START": "2020-04-06T15:40:00-0700",
          "END": "2020-04-06T18:30:00-0700",
          "TEACHER_NAME": "Dianne Dianne ",
          "TEACHER_EMAIL": "do\_not\_reply@campus.edu",
          "LOC_CODE": "ANM1-259",
          "LOC_ADD1": "259",
          "LOC_ADD2": "79 New"
        }
      ]
    }
  }
}

```

## RESTful API Vendor

campusM expects the following RESTful API:

Example GET request: [https://someHostName/serviceName/username?StartDate=\[startdate\]&EndDate=\[enddate\]](https://someHostName/serviceName/username?StartDate=[startdate]&EndDate=[enddate])

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### Note

Path parameters, query parameters, and API authentication can be customized in the product integration configuration. For more information, see [Configuration for RESTful API Vendor](#).

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- **JSON Expected Format**

```
{
  "events": [
    {
      "eventRef": "ref 1",
      "desc1": "Quantum mechanics exam 1",
      "desc2": "Exam Timetable",
      "desc3": "Some other description",
      "start": "2020-07-27T07:00:00.000Z",
      "end": "2020-07-27T07:00:00.000Z",
      "isAllDay": false,
      "teacherName": "Faculty invigilator",
      "teacherEmail": "buckleym@example.ac.uk",
      "locCode": null,
      "locUrl": null,
      "locAdd1": "Great Hall",
      "locAdd2": "Senate building",
      "locAdd3": null,
      "locAdd4": null,
      "locPostCode": null,
      "locWorkTel": null,
      "attendanceExclude": false,
      "campus": "London",
      "meeting": true,
      "meetingURL": "https://www.google.com/",
      "meetingURLDesc": "This is a meeting url description"
    }
  ]
}
```

- **XML Expected Format**

```
<root>
  <events>
    <eventRef>ref 1</eventRef>
    <desc1>Quantum mechanics exam 1</desc1>
    <desc2>Exam Timetable</desc2>
    <desc3>Some other description</desc3>
    <start>2020-07-27T07:00:00.000Z</start>
    <end>2020-07-27T07:00:00.000Z</end>
    <isAllDay>>false</isAllDay>
    <teacherName>Faculty invigilator</teacherName>
    <teacherEmail>buckleym@example.ac.uk</teacherEmail>
    <locCode/>
    <locUrl/>
    <locAdd1>Great Hall</locAdd1>
    <locAdd2>Senate building</locAdd2>
    <locAdd3/>
    <locAdd4/>
    <locPostCode/>
    <locWorkTel/>
    <attendanceExclude>>false</attendanceExclude>
    <campus>London</campus>
  </events>
</root>
```

```

<meeting>true</meeting>
<meetingURL>https://www.google.com/</meetingURL>
<meetingURLDesc>This is a meeting url description</meetingURLDesc>
</events>
</root>

```

- **Attributes Mapping for JSON/XML Fields**

Attributes Mapping

External Field Name	Internal CampusM Field Name	Description	Mandatory Yes/No	Data Type	Default	Example
Event Reference	eventRef	A unique ID for the event	yes	String max 100 chars	-	"EVENT12345"  eventRef should include only alphanumeric chars and '.', ':', '-'
Primary Description	desc1	The primary description of the Event/Course/Exam	yes	String	-	"Quantum mechanics exam 1"
Secondary Description	desc2	The secondary description of the Event/Course/Exam	no	String - truncated after 2000 chars	-	"Exam Timetable"
Tertiary Description	desc3	Tertiary description - Any additional details of the event type. It is displayed on the detail page of the calendar, below the primary description.	no	String - truncated after 2000 chars	-	-
Start Date	start	The start date/time - the format for this is configurable in the configuration area.	yes	String	-	"2019-08-13T07:00:00.000Z"
End Date	end	The end date/time. The format for this is configurable in the configuration area. (It does not have to contain the timezone information).	yes	String	-	"2019-08-13T07:00:00.000Z"
Is All Day	isAllDay	Whether or not the event is an all-day-event  Note: events that occur over multiple dates will be shown as All-Day events in the campusM calendar regardless of this value.	no	Boolean (true/ false)	false	true

External Field Name	Internal CampusM Field Name	Description	Mandatory Yes/No	Data Type	Default	Example
Lecturer Name	teacherName	The name of the teacher	no	String	-	
Lecturer Email	teacherEmail	The email of the teacher - Clicking the email allows the user to send an email	no	String	-	"buckleym@example.ac.uk"
Location Reference	locCode	Clicking the location links the user to campus maps. This must be a unique identifier for the location to which you want to link in campus maps. The data type can be any string, and must be set as the location reference for the position in the App Manager.	no	String	-	
Location Reference	locUrl	A URL that can be sent in the response. It can be a campusM URL scheme / standard HTTP link (overrides locCode as the location reference link)	no	String	-	
Location Name	locAdd1	A description of the location of the event	no	String	-	"Great Hall"
Additional Location Information	locAdd2	An additional description of the location	no	String	-	"Senate building"
Additional Location Information	locAdd3	An additional description of the location	no	String	-	
Additional Location Information	locAdd4	An additional description of the location	no	String	-	
Location Post Code	locPostCode	If this field is populated, the location name will be treated as the first line of an address rather than a room name	no	String	-	
Location Work Telephone Number	locWorkTel	Contact number of the event location or organizer	no	String	-	
Attendance Exclude	attendanceExclude	A flag that defines whether or not to exclude the event	no	Boolean (true/	false	true

External Field Name	Internal CampusM Field Name	Description	Mandatory Yes/No	Data Type	Default	Example
Flag		from attendance monitoring. If this is not specified, all events have attendance monitoring enabled. Note that this is only relevant when campusM Attendance has been deployed.		false)		
Campus Name	campus	If there are multiple campuses, this field can be used to distinguish between different timezones	no	String	-	
Meeting	meeting	A flag that indicates if a meeting link will be included	no	Boolean	false	
Meeting URL	meetingURL	The URL for the meeting for the event	no	String	-	
Meeting URL Description	meetingURLDesc	The description for the meeting URL	no	String	-	

- iCal Expected Format:**

```

BEGIN:VCALENDAR
BEGIN:VEVENT
DTSTART:20200428T180000
DTEND:20200428T210000
CREATED:20200226T165202Z
UID:8568585558096800-1588107600
SUMMARY:Linear Algebra
DESCRIPTION:This is a math course
URL:https://www.hostName.edu/event/r-a-d-free-9-hour-womens-self-defense/2020-04-28/
LOCATION:Hammond Peregrine Hall 300\, 2330 173rd Street\, Hammond\, IN\, 46323\,
United States
GEO:41.5805562;-87.4723704
ORGANIZER;CN=John Smith:MAILTO:jsmith@host1.com
X-MEETING:true
X-MEETING-URL:https://google.com/
X-MEETING-URL-DESC:This is a great description
X-PROPERTY-LOCATION-WORK-PHONE:207-123-4567
END:VEVENT
END:VCALENDAR

```

- Attributes Mapping for iCal Fields**

## Attributes Mapping

External Field Name	Internal CampusM Field Name	Description	Mandatory Yes/No	Data Type	Default	Example
SUMMARY	Primary Description, Event Reference	The primary description of the Event/Course/Exam. In addition, 'Events Reference' will consist of this field (together with few others).	yes	String	SUMMARY	Primary Description, Event Reference
DESCRIPTION	Secondary Description, Event Reference	The secondary description of the Event/Course/Exam. In addition, 'Events Reference' will consist of this field (together with few others).	no	String - truncated after 2000 chars	DESCRIPTION	Secondary Description, Event Reference
DTSTART	Start Date, Event Reference	The start date/time - the format for this is configurable in the configuration area. In addition, 'Events Reference' will consist of this field (together with few others).	yes	String - <a href="#">yyyymmddThhmmssZ</a>	DTSTART	Start Date, Event Reference
DTEND	End Date, Event Reference	The end date/time. The format for this is configurable in the configuration area. (It does not have to contain the timezone information). In addition, 'Events Reference' will consist of this field (together with few others).	yes	String - <a href="#">yyyymmddThhmmssZ</a>	DTEND	End Date, Event Reference
ORGANIZER	Lecturer Name	The name of the teacher	no	String	ORGANIZER	Lecturer Name
ORGANIZER	Lecturer Email	The email of the teacher - Clicking the email allows the user to send an email	no	String	ORGANIZER	Lecturer Email
URL	Location Reference	A URL that can be sent in the response. It can be a campusM URL scheme / standard HTTP link (overrides locCode as the location reference link)	no	String	URL	Location Reference
GEO	Location Latitude and Location Longitude	The latitude (before ";") and longitude (after ";") for the location coordinates	no	Decimal	GEO	Location Latitude and Location Longitude

External Field Name	Internal CampusM Field Name	Description	Mandatory Yes/No	Data Type	Default	Example
LOCATION	Location Name	A description of the location of the event	no	String	-	"Great Hall"

- **Error Handling**

If there is an error in the response because timetable data does not exist for the user, the response is the following:

HTTP Status Code should be '404 Not Found'

The response contains the following text: `timetable_not_found`

- **iCal**

iCal is required according to the iCal standard format. Customized event attributes can be added as additional iCal properties in the iCal feed. For the additional properties' required configuration, see the [Configuration](#) section.

## Banner Vendor

campusM uses the following Banner APIs:

- `https://<hostName>:<portNumber>/StudentApi/api/students/<BANNER_ID>/class-schedules?term=<term>`

**Banner ID** – username or an attribute from the token.

**Term** – a term code according to the dates range given in the request from the Application.

This API returns a list of courses for the student of the given Banner ID during the given term code.

- `https://<hostName>:<portNumber>/StudentApi/api/terms`

This API returns a list of all the available terms for all the students with the information of each term.

## MyTimetable (Semestry) Vendor

campusM uses the following MyTimetable API by default:

**GET** `https://<hostName>:<portNumber>`

path: `api/v0/timetable`

If **Fetch by Timetable ID** is enabled in the instance configuration, the [following endpoint](#) is used:

path: `api/v0/timetables/{id}`

Where the ID is the same as the requestedAuth header value mentioned below.

Query parameters:

- `startDate`

- endDate
- excludeResourceTimetables

Headers:

- apiToken
- requestedAuth

For example:

URL: `https://mytimetable-test.exlibris.com/api/v0/timetable?startDate=2020-02-01&endDate=2020-02-29&excludeResourceTimetables=true`

headers: {apiToken=[10341155-2adf-46ee-92ec-c298c7b32187], Content-Type=[application/json], Accept=[application/json], requestedAuth=[aaa@gmail.com]}

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### Note

The `conference` attribute in the response is used to indicate that a meeting URL should be included with the event. The `conferenceUrl` attribute specifies the actual URL.

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## Ellucian Colleague (Custom) Vendor

The following Ellucian Colleague (Custom) APIs are available for the Timetable product integration:

POST `https://<hostName>:<portNumber>`

path: `/ColleagueApi/students/timetable`

Body:

```
{
  "studentId": "123456",
  "startDate": "08/01/2020",
  "endDate": "12/01/2020"
}
```

**Timetable integration Ellucian Colleague (Custom) implementation:**

1. The Ellucian Colleague (custom) vendor configuration is retrieved with the `calType` in the request coming from the application.
2. The body is built with information from the user identifier and from the request (start+end dates).
3. The courses information is received.
4. Event items are created.

## Ellucian Colleague (Web API) Vendor

campusM uses several API calls to fetch the timetable data:

- The first is to authenticate the Colleague Web API via a session token:

- `https://{HOST}/colleagueApi/session/proxy-login`
- The second call is to retrieve all relevant terms for the student:
  - `https://{HOST}/colleagueApi/terms`
- The third call is to retrieve the grades data for the active term. This re-uses any available session token or re-authenticate with the proxy-login API:
  - `https://{HOST}/colleagueApi/students/{username}/academic-credits`
- The fourth call is to retrieve the sections data (which contains the Timetable meetings). This also re-uses any available session token or re-authenticate with the proxy-login API:
  - `https://{HOST}/colleagueApi/qapi/sections`

## Google Calendar Vendor

Currently, campusM supports Public Google Calendars. campusM uses the following Google Calendar APIs:

GET <https://www.googleapis.com/calendar/v3/calendars/events>

Additional information on this endpoint can be found [here](#).

Prerequisites to be completed by the customer:

- Steps that must occur in the Google Developer Console prior to setting up the Product Integration
  - Navigate to the [Google Developer Console](#)
  - From the left menu, select **Library**
  - Search for `calendar`
  - Select **Google Calendar API**
  - Select **ENABLE**
  - Select **+ CREATE CREDENTIALS > API Key**. The "API Key created" page appears.
  - Note the API key
  - Select **CLOSE**. The newly created credential appears under **API Keys**.
- Prerequisites for the Product Integration Configuration page:
  - Have the API Key from the steps above
  - Get the calendar ID
    - In the Google Calendar interface, from the left, locate **My calendars or Other calendars**
    - Hover over the calendar you need and select the settings icon. A menu appears.
    - Select **Settings**
    - Scroll to the **Integrate calendar** section until you see **Calendar ID** with the relevant value below
    - Copy this value to the product integration configuration page

## Microsoft Graph API (Calendars)

You will first need to configure Microsoft Azure (Graph) for the Timetable Product Integration. See [here](#) for more information.

The following is the required JSON format for **Microsoft Graph API**:

## Note

The list of roles returned in the `displayName` field can be returned separated by a delimiter that can be configured in the Roles PI configuration.

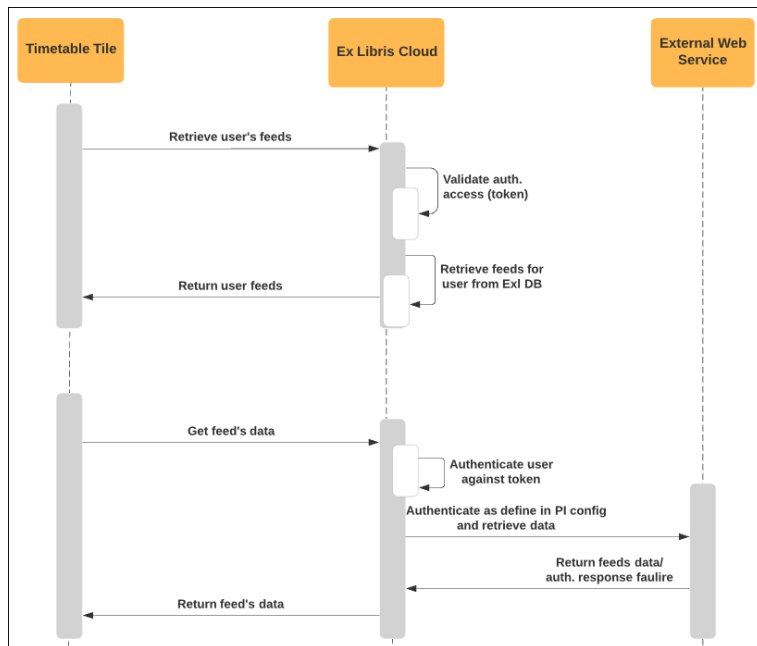
For example, in the following response, the delimiter is a hyphen (-).

```
["@odata.context": "https://graph.microsoft.com/v1.0/$metadata#directoryObjects(displayName)",
"value": [
  {
    "@odata.type": "#microsoft.graph.group",
    "displayName": "US-DC-FAC"
  }
]
```

The list of roles provided by the Microsoft Graph API will be acquired by using the following Microsoft Graph API services:

- <https://login.microsoftonline.com/{tenant}/v2.0/token> (in order to generate the token that will be used in the second service)
- <https://graph.microsoft.com/v1.0/users/{id}/roles> (in order to get the response which contains the roles list from above)

## Technical Flow Diagram



Technical Flow Diagram - Timetable

## Databee Exams Manager Vendor

campusM uses the following Databee API:

`GET/api/personal/tt/?event={{eventid}}&unique={{studentID}}` – The parameters and headers passed into this API are all set within the configuration page. This returns the timetable data for the user.

# Configuration

To use the Timetable product integration, configure the following components:

- Timetable Product Integration instances - an instance for each feed.
- To be done by Ex Libris: Application Server, Authentication Access, Web Service Endpoints, 'Calendar' Menu Entry.

## Configuring a Timetable Product Integration Instance

To configure a Timetable product integration instance (feed), select **Add Product Integration Instance** from the **Product Integrations** main menu option and select **TIMETABLE**.

The Timetable configuration page appears as the following:

App Manager Product Integrations Timetable Instance

Timetable Feed Vendor

Timezone Configuration

Save Save and Continue Editing

**Enable Product Integration**  
Check this box to enable timetable

**Product Integration Description\***  
Description for this timetable instance

Timezone Configuration

**Timezone Configuration Option**  
Choose how to handle the date returned from the API. The default approach is that the API returns times according to ISO standards (includes the timezone).  
Default: 'ISO Standards'

Timetable Feed Vendor

**Vendor Name**  
API

REST API Vendor Configuration

**Date Format for the Data Returned in the Feed**  
Default: 'yyyy-MM-dd HH:mm:ss.SSS'

API Configuration

**URL to retrieve the information**  
The base URL should include path parameters - for example:  
`https://someHostName/serviceName/pathParameterName`  
Default: 'https://'

**Response Content Type**  
What type of data you re expecting back from this API endpoint  
Default: 'JSON'

**URL Query Parameters**  
No Query Parameters [+ Add Query Parameter](#)

**URL Path Parameters**  
No Path Parameters [+ Add Path Parameter](#)

**General Headers**  
No Header Items [+ Add Header Item](#)

API Authentication

**Authentication Type**  
-- Please Select --

### Timetable Configuration

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## General Configuration

Configuration Option	Description	Mandatory	Data Type	Default	Example
<b>Manage Integration</b>					
Enable Product Integration	Select to enable the product integration	Yes	Checkbox	False	
Product Integration Description	A description of the product integration for internal use	Yes	String		
<b>Vendor</b>					
<p>Select one of the following links to see the configuration options for that vendor:</p> <ul style="list-style-type: none"> <li>• <a href="#">Configuration for Celcat Vendor</a></li> <li>• <a href="#">Configuration for RESTful API Vendor</a></li> <li>• <a href="#">Configuration for Banner API Vendor</a></li> <li>• <a href="#">Configuration for MyTimetable (Semestry) API Vendor</a></li> <li>• <a href="#">Configuration for Ellucian Colleague (Custom) Vendor</a></li> <li>• <a href="#">Configuration for Ellucian Colleague (Web API) Vendor</a></li> <li>• <a href="#">Configuration for Oracle PeopleSoft Vendor</a></li> <li>• <a href="#">Configuration for Google Calendar Vendor</a></li> </ul>					
<b>Timezone Configuration</b>					
Timezone Configuration Option	Sets how the date should be handled that is returned from the API	Yes	Drop-down	ISO Standards	
Select Timezone	If you selected "Single Timezone" for the Timezone Configuration Option, then this field will specify which timezone to use	Yes	Drop-down	UTC	
Field Name	If you selected "Multiple Timezones" for the Timezone Configuration Option, then this field will specify which attribute in the response indicates the location	Yes	String		
Field Value	If you selected "Multiple Timezones" for the Timezone Configuration Option, then this field will specify what value should indicate the specific timezone	Yes	String		
Timezone	If you selected "Multiple Timezones" for the Timezone Configuration Option, then this field will specify what timezone should be used	Yes	Drop-down		
<b>General</b>					
Display calendar based on roles	If this is checked, the app will display the calendar only for the selected roles	No	Checkbox	False	
Roles	Select the App Role(s) that this calendar will be visible to	No	Search	False	

			and Select		
Use Location URL?	If this is checked, the app will use the location URL specified in the PI data feed, over the location reference value (used to deep link to a position within the maps component)	No	Checkbox	False	
Enable Notifications	Determines the default mobile notification behavior for users who have not configured otherwise in their app settings. When enabled, a push notification will be sent to a user's mobile device 15 minutes before a scheduled event. When disabled, no notification will be sent prior to the event. Note that this setting is not applicable to attendance calendars, as their notification settings can be found in the Attendance section of App Manager.	No	Checkbox	True	
<b>Import/Export Configuration</b>					
Export	Creates a JSON file with the product integration configuration	No			
Import	Use this option in order to load configuration information from JSON of an exported product integration	No			

## Configuration for Celcat Vendor

The following table describes the configuration options available for the Celcat vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
<b>Vendor</b>					
Vendor Name	Celcat	Yes	Drop-down		
Base URL to retrieve the information	This is the base URL for the Celcat API	Yes	String	https://myDomain.com	
Parameter Input Option	Sets the type of User Input Identifier that is needed	Yes	Drop-down		
Token Property Name	This is a type of User Input Identifier that can be used	Yes, if the Parameter Input Option selected was "Token Property"	String		
Constant Value	This is a type of User Input Identifier that can be used	Yes, if the Parameter Input Option selected was "Constant"	String		
Authentication Type	Sets the API authentication type	No	Drop-down		
API Code	This is required to authenticate with Celcat	Yes	String		
Username Resource Type	Sets the supported Celcat resource type that matches the campusM username attribute	Yes	Drop-down		
Timetable ID	Sets the Celcat ID of the timetable to fetch events from	Yes	Integer		

Configuration Option	Description	Mandatory	Data Type	Default	Example
Start of Academic Timetable Year	Sets the first month of the academic year; the feed needs to know this	Yes	Drop-down		

## Configuration for RESTful API Vendor

The following table describes the configuration options available for the RESTful API vendor:

Configuration Option	Description	Mandatory	Default	Example
Vendor Name	Select <b>API</b>	Yes		
Date Format	The date format for the data returned in the feed	Yes, but default is provided	yyyy-MM-dd HH:mm:ss:SSS	
URL to retrieve the information	The URL for the Web service	Yes	https://	
Response Content Type	The Web service's response content type	Yes	JSON	
URL Query Parameters	The parameters sent as part of the query	No		For <code>https://someHostName/serviceName?username={user}</code> , the query parameter is <code>username</code> .
URL Path Parameters	The parameters sent as part of the path	No		For <code>https://someHostName/serviceName/username</code> , the path parameter is <code>username</code> .
General Headers	Add (key, value) for additional needed headers	No		
Authentication Type	Select one of the following options: <ul style="list-style-type: none"> <li>No Auth</li> <li>Basic Auth</li> <li>API Key</li> <li>Bearer token</li> <li>OAuth Using User App Authentication – select an OAuth integration profile (from the Integration Profiles configured in App Settings) and choose where the access token should be added, Header or URL.</li> <li>OAUTH Using Client Credentials – select this if you are using a preliminary token call to get the access token.</li> </ul>	No		
Time Zone Configuration	Select an option to determine how to take into account the time zone when handling the time returned from the API. The following options are available:	No		

Configuration Option	Description	Mandatory	Default	Example
	<ul style="list-style-type: none"> <li>ISO standards – handle the time zone according to ISO standards</li> <li>Single Time zone – select a default time zone for all of your events and locations</li> <li>Multiple Time zones – select a different time zone for each location. Enter the field name to contain the location information to use to distinguish between multiple locations with different time zones.</li> </ul>			

If the Response Content Type is configured to be iCalendar, additional fields appear. The following table describes the configuration options available for iCalendar:

Configuration Option	Description	Mandatory	Data Type	Default	Example
Teacher Email Property Name	The property name for the email of the teacher	No	String	-	X-PROPERTY-TEACHER-EMAIL
Location Code Property Name	The property name for the location code  (Click on the location will link out the user to campus maps. This must be a unique identifier for the location you want to link to in campus maps. The data type can be any string, and must be set as the location reference for the position in the App Manager)	No	String	-	X-PROPERTY-LOCATION-CODE
Location Image Property Name	The property name for the location image	No	String	-	X-PROPERTY-LOCATION-IMAGE
Location Address No. 2 Property Name	The property name for the location secondary address	No	String	-	X-PROPERTY-LOCATION-ADDRESS-2
Location Work Phone Number Property Name	The property name for the contact number of the event location or organizer	No	String	-	X-PROPERTY-LOCATION--WORK-PHONE
Location Post Code Property Name	The property name for the location post code	No	String	-	X-PROPERTY-LOCATION-POST-CODE
Location URL Property Name	The property name for the URL that can be sent in the response. can be a campusM URL scheme / standard HTTP link	No	String	-	X-PROPERTY-LOCATION-URL
Location Latitude Property Name	The property name for the latitude for the location Coordinates	No	String	-	X-PROPERTY-LOCATION-LATITUDE
Location Longitude Property Name	The property name for the longitude for the location Coordinates	No	String	-	X-PROPERTY-LOCATION-LONGITUDE

Configuration Option	Description	Mandatory	Data Type	Default	Example
Attendance Exclude Property Name	The property name for the flag that defines whether or not to exclude the event from attendance monitoring. If this is not specified all events will have attendance monitoring enabled. Note that this is only relevant when campusM Attendance has been deployed.	No	String	-	X-PROPERTY-ATTENDANCE-EXCLUDE
Meeting Property Name	The property name for the meeting indicator	No	String	-	X-MEETING
Meeting URL Property Name	The property name for the meeting URL	No	String	-	X-MEETING-URL
Meeting URL Description Property Name	The property name for the meeting URL description	No	String	-	X-MEETING-URL-DESC

## Configuration for Banner API Vendor

The following table describes the configuration options available for the Banner API vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration on the user's campusM app	No	Check box	Yes	
Product Integration Description	A description of the product integration for internal use	Yes	String		
Vendor Name	Banner	Yes	Drop-down		
Base URL to retrieve the information	URL for the webservice. Should be in the following format: <code>https://&lt;hostName&gt;:&lt;portNumber&gt;/StudentApi/api/students/&lt;BANNER_ID&gt;/class-schedules</code>	Yes	URL		
User Input Identifier	Select a parameter input option for Banner ID. Possible values: Username, Token Property, and Constant.	Yes	Drop-down	For <code>https://someHostName/serviceName/username</code> , the path parameter is <code>username</code>	
Authentication Type	Authentication type against the web service	No	Drop-down	No Auth	
Exclude By Term Code	<i>Enter one or more term codes, or partial codes, to exclude. Use '%' for a wildcard sequence, e.g. "%5" will exclude any term code ending in 5, while "5" will exclude any term code that includes a 5 anywhere in it.</i>	No	String		
Enable Events Before Start of Term	<i>When enabled, calendar events that begin before the start of their term will appear in their correct time.</i>	No	Checkbox	False	

Configuration Option	Description	Mandatory	Data Type	Default	Example
Exclude by Term Description	<i>Enter one or more term descriptions, or partial descriptions, to exclude. Use '%' for a wildcard sequence, e.g. "%Test" will exclude any term description ending with "Test", while "Test" will exclude any term description that includes "Test" anywhere in it.</i>	No	String		
Time Zone Configuration	Select an option to determine how to take into account the time zone when handling the time returned from the API. The following options are available: <ul style="list-style-type: none"> <li>ISO standards – handle the time zone according to ISO standards</li> <li>Single Time zone – select a default time zone for all of your events and locations</li> <li>Multiple Time zones – select a different time zone for each location. Enter the field name to contain the location information to use to distinguish between multiple locations with different time zones.</li> </ul>	No	Drop-down		
General					
Use Location URL?	If this is checked, the app will use the location URL specified in the PI data feed, over the location reference value (used to deep link to a position within the maps component)	No	Checkbox	Unselected	
Display Location Description	Select to display the location description in the UI	No	Checkbox	Unselected	
Display Campus Description	Select to display the campus description in the UI	No	Checkbox	Unselected	
Display Room Description	Select to display the room number in the UI	No	Checkbox	Unselected	

## Configuration for MyTimetable (Semestry) API Vendor

The following table describes the configuration options available for the MyTimetable (Semestry) API vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration on the user's campusM app	No	Check box	Yes	
Product Integration Description	A description of the product integration for internal use	Yes	String		
Vendor Name	Select <b>MyTimetable</b>	Yes	Drop-down		
Fetch by	The timetable ID sent to MyTimetable is the same as the configured 'User Input Identifier'.	No	Checkbox	Unchecked	

Configuration Option	Description	Mandatory	Data Type	Default	Example
Timetable ID					
Base URL to retrieve the information	The base URL for the MyTimetable API (including port)	Yes	URL		<p>https://someHost.com:portNumber</p> <p>https://myColleagueHost:5555</p>
Parameter Input Option	Select the source for your user identifier to send as the requestedAuth header on the MyTimetable API. Possible values: <b>Username</b> , <b>Token Property</b> , and <b>Constant</b> .	Yes	Drop-down		For https://someHostName/serviceName/username, the path parameter is username
Authentication Type	<p>The authentication type for connecting to the web service</p> <p>Select one of the following options:</p> <ul style="list-style-type: none"> <li>• <b>No Auth</b></li> <li>• <b>Basic</b></li> <li>• <b>Bearer Token</b></li> <li>• <b>API Key</b></li> <li>• <b>OAuth Using User App Authentication</b> – select an OAuth integration profile (from the Integration Profiles configured in App Settings) and choose where the access token should be added – Header or URL.</li> <li>• <b>OAuth Using Client Credentials</b> – select this if you are using a preliminary token call to get the access token.</li> </ul>	No	Drop-down	No Auth	
"fetchBy" Query Param Value	If this is not required, please leave blank.	No	String		hostKey
"type" Query Param Value	If this is not required, please leave blank.	No	String		studentset
Event Reference Start Time Format	To ensure the event reference is unique, we append the event's start date to the event ID. Specify the date string format, using Java's DateTimeFormatter pattern letters. Using dashes as a separator ("kebab-case") is preferred.	No	String	YYYY-MM-dd-HH-mm	
Unify Events With Multiple Locations	If enabled, events that have multiple locations are treated as single events. If disabled, a new event is created for each location.	No	Checkbox	Unchecked	

Configuration Option	Description	Mandatory	Data Type	Default	Example
Display All Lecturers	If enabled, all lecturers assigned to an event are displayed. Otherwise, only the first lecturer is shown.	No	Checkbox	Unchecked	
Map Activity Type Description	If enabled and available in the event response, displays the description of the event's activity type.	No	Checkbox	Unchecked	
Timezone Configuration Option	Select an option to determine how to take the timezone into account when handling the time returned from the API. The following options are available: <ul style="list-style-type: none"> <li>• <b>ISO standards</b> – handle the time zone according to ISO standards</li> <li>• <b>Single Timezone</b> – select a default time zone for all of your events and locations</li> <li>• <b>Multiple Timezones</b> – select a different time zone for each location. Enter the field name to contain the location information to use to distinguish between multiple locations with different time zones.</li> </ul>	No	Drop-down		
Allow Joint Activities	If enabled and available in the event response, it determines the eventIDs according to the child activity IDs only.	No	Checkbox	Unchecked	
Take Description From Notes	If enabled, it uses the notes field from the event as the description in the timetable. Otherwise, the description will be left blank.	No	Checkbox	Unchecked	

## Configuration for Ellucian Colleague (Custom) Vendor

The following table describes the configuration options available for the Ellucian Colleague (Custom) vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration on the user's campusM app	No	Checkbox	Yes	
Product Integration Description	A description of the product integration for internal use	Yes	String		
Vendor Name	Ellucian Colleague (custom)	Yes	Drop-down		
Base URL to retrieve the information	URL for the webservice.	Yes	URL		https:// someHost.com:portNumber

Configuration Option	Description	Mandatory	Data Type	Default	Example
					https://myColleagueHost:5555
User Input Identifier	Select a parameter input option for Banner ID. Possible values: Username, Token Property, and Constant.	Yes	Drop-down	For https://someHostName/serviceName/username, the path parameter is username	
Authentication Type	Authentication type against the web service	No	Drop-down	No Auth	
Time Zone Configuration	Select an option to determine how to take into account the time zone when handling the time returned from the API. The following options are available: <ul style="list-style-type: none"> <li>ISO standards – handle the time zone according to ISO standards</li> <li>Single Time zone – select a default time zone for all of your events and locations</li> <li>Multiple Time zones – select a different time zone for each location. Enter the field name to contain the location information to use to distinguish between multiple locations with different time zones.</li> </ul>	No	Drop-down		

## Configuration for Ellucian Colleague (Web API) Vendor

The following table describes the configuration options available for the Ellucian Colleague (Custom) vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration	Yes	Checkbox	Unchecked	
Product Integration Description	A description of the product integration for internal use	Yes	String		
<b>Vendor</b>					
Vendor Name	Colleague (Web API)	Yes	Drop-down		

Configuration Option	Description	Mandatory	Data Type	Default	Example
URL to retrieve the information	The URL for the API server. The protocol, hostname, and optionally port (if required) are needed.	Yes	String	<a href="https://myDomain.com">https://myDomain.com</a>	https://{Host}
URL Query Parameters	Any query parameters required for the Colleague (Web API) server. Currently none.	No	Parameter		
URL Path Parameters	Any path parameters required for the Colleague (Web API ) server. Currently none.	No	Parameter		
General Headers	Any additional headers required for the Colleague (Web API) server. We currently require one, set as follows:  Header Key: X-CustomCredentials  Header Value: colleaguewebapitoken The header key can be changed if your Colleague server accepts a different key name, but the value is cannot be changed.	Yes	Header		
Authentication Type	Select one of the following options, according to your Colleague server setup:  <ul style="list-style-type: none"> <li>No Auth</li> <li>Basic Auth</li> </ul>	No	Dropdown		No Auth
Parameter Input Option	The parameter input option for Colleague ID required for the Colleague Web API.  Possible values: Username, Token Property, and Constant. Typically, this is the user's "username" attribute.	Yes	Drop-down		Username
<b>Web API</b>					
Proxy ID	Required to fetch the session token.	Yes	String		
Proxy Password	Required to fetch the session token.	Yes	String		
Token Expiry	The time in hours to store a web API session token	No	Integer	1	

Configuration Option	Description	Mandatory	Data Type	Default	Example
	for up to a maximum of 24 hours.				
Start Of The Week	The day that starts the week can vary in different locales. Please select from the list below if yours differs from the default.	No	Drop-down	Monday	
Include Drops	Include dropped credits when fetching grade records.	No	Boolean	No	
<b>Online Courses</b>					
Display Online Courses		No	Checkbox	Unchecked	
Text - "Online Meeting"		No	String	Online Meeting	
Online Course Event Duration	Events belonging to online courses often do not have meeting times set. Select the duration to use for these specific meetings.	No	Drop-down	Display as 30-minute event	
Online Course Event Start Time	Sets the start time for any course meetings that do not have meeting times set.	No	Drop-down	08:00	
<b>Timezone Configuration</b>					
Timezone Configuration Option	Sets how the date returned from the API should be handled	Yes	Dropdown	ISO Standards	
Select Timezone	If you selected <b>Single Timezone</b> for the Timezone Configuration option, this field specifies which time zone to use	Yes	Dropdown	UTC	
Field Name	If you selected <b>Multiple Timezones</b> for the Timezone Configuration option, this option specifies which attribute in the response indicates the location	Yes	String		
Field Value	If you selected <b>Multiple Timezones</b> for the Timezone Configuration option, this field specifies	Yes	String		

Configuration Option	Description	Mandatory	Data Type	Default	Example
	what value should indicate the specific time zone				
Timezone	If you selected <b>Multiple Timezones</b> for the Timezone Configuration option, this field specifies which time zone to use	Yes	Dropdown		
<b>General</b>					
Use Location URL?	If this is checked, the app will use the location URL specified in the PI data feed, over the location reference value (used to deep link to a position within the maps component)	No	Checkbox	Unchecked	
<b>Import/Export Configuration</b>					
Export	Creates a JSON file with the product integration configuration	No			
Import	Use this option in order to load configuration information from JSON of an exported product integration	No			

## Configuration for Oracle PeopleSoft Vendor

The following table describes the configuration options available for the Oracle PeopleSoft vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration on the user's campusM app	No	Check box	Yes	
Product Integration Description	A description of the product integration for internal use	Yes	String		
Vendor Name	Oracle PeopleSoft	Yes	Drop-down		
URL to retrieve the information	The URL for the Web service	No		https://	

Configuration Option	Description	Mandatory	Data Type	Default	Example
URL Query Parameters	The parameters sent as part of the query. If it is prompt param, select this checkbox.	No		<p>For:</p> <pre>https:// host?isconnectedquery=N&amp;maxrows=0&amp;prompt_ uniquepromptname=USERNAME,START,END&amp;prompt_ fieldvalue=STUDNT,2020-04-06,2020-04-13&amp;json_ resp=true</pre> <p>The regular query parameter is <code>maxrows</code>. The prompt param is <code>USERNAME</code> and its value is <code>STUDNT</code>.</p>	
Authentication Type	<p>Select one of the following options:</p> <ul style="list-style-type: none"> <li>No Auth</li> <li>Basic Auth</li> <li>API Key</li> <li>Bearer token</li> <li>OAuth Using User App Authentication – select an OAuth integration profile (from the Integration Profiles configured in App Settings) and choose where the access token should be added, Header or URL.</li> <li>OAuth Using Client Credentials – select this if you are using a preliminary token call to get the access token.</li> </ul>	No	Drop-down	No Auth	
Time Zone Configuration	<p>Select an option to determine how to take into account the time zone when handling the time returned from the API. The following options are available:</p> <ul style="list-style-type: none"> <li>ISO standards – handle the time zone according to ISO standards</li> <li>Single Time zone – select a default time zone</li> </ul>	No	Drop-down		

Configuration Option	Description	Mandatory	Data Type	Default	Example
	<p>for all of your events and locations</p> <ul style="list-style-type: none"> <li>Multiple Time zones – select a different time zone for each location. Enter the field name to contain the location information to use to distinguish between multiple locations with different time zones.</li> </ul>				

## Configuration for Databee Exams Manager Vendor

The following table describes the configuration options available for the Databee Exams Manager vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
<b>Manage Integration</b>					
Enable Product Integration	Select to enable the product integration on the user's campusM app	No	Checkbox	Yes	
Product Integration Description	A description of the product integration for internal use	Yes	String		
<b>Vendor</b>					
Vendor Name	Databee Exams Manager	Yes	Drop-down	Vendor Name	
Base URL to retrieve the information	URL for the web service	Yes	URL		<a href="https://myDomain.com">https://myDomain.com</a>
URL Query Parameters	The parameters sent as part of the query.	Yes			<p>This vendor uses the following parameters:</p> <ul style="list-style-type: none"> <li>event</li> <li>unique</li> </ul>
General Headers	Add (key, value) for additional needed headers	Yes			<p>This vendor uses the following header as the API key:</p>

Configuration Option	Description	Mandatory	Data Type	Default	Example
					<ul style="list-style-type: none"> <li>X-API-KEY</li> </ul>
<b>Timezone Configuration</b>					
Time Zone Configuration Option	Sets how the date should be handled that is returned from the API	Yes	Drop-down		This vendor should use a single timezone configuration.
Select Timezone	If you selected "Single Timezone" for the Timezone Configuration Option, this field specifies which timezone to use	Yes	Drop-down	UTC	
<b>Import/Export Configuration</b>					
Export	Creates a JSON file with the product integration configuration	No			
Import	Use this option to load configuration information from JSON of an exported product integration				

## Configuration for Google Calendar Vendor

The following table describes the configuration options available for the Google Calendar vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
<b>Manage Integration</b>					
Enable Product Integration	Select to enable the product integration	Yes	Checkbox	False	
Product Integration Description	A description of the product integration for internal use	Yes	String		
<b>Vendor</b>					
Vendor Name	Google Calendar	Yes	Drop-down		
Calendar Type	Sets whether the Google Calendar is Public or Private. Currently, only Public calendars are supported.	Yes	Drop-down	Public	
URL Query Parameters	The parameters sent as part of the query	Yes		Set the following three query parameters. <ol style="list-style-type: none"> <li>Query Parameter 1               <ol style="list-style-type: none"> <li>Parameter Name: timeMin</li> <li>Parameter Type: Request Options</li> <li>Request Parameter Name: start</li> </ol> </li> </ol>	

Configuration Option	Description	Mandatory	Data Type	Default	Example
				<ol style="list-style-type: none"> <li>4. Request Parameter Date Format: yyyy-MM-dd'T'HH:mm:ss.SSS'Z'</li> </ol> <ol style="list-style-type: none"> <li>2. Query Parameter 2 <ol style="list-style-type: none"> <li>1. Parameter Name: timeMax</li> <li>2. Parameter Type: Request Options</li> <li>3. Request Parameter Name: end</li> <li>4. Request Parameter Date Format: yyyy-MM-dd'T'HH:mm:ss.SSS'Z'</li> </ol> </li> <li>3. Query Parameter 3 <ol style="list-style-type: none"> <li>1. Parameter Name: singleEvents</li> <li>2. Parameter Type: Constant</li> <li>3. Constant Value: true</li> </ol> </li> </ol>	
URL Path Parameters	The parameters sent as part of the path	Yes		<p>Set the following path parameter.</p> <p>Parameter Name: calendarId</p> <p>Parameter Type: Constant</p> <p>Constant Value: This is the id specific to the Google Calendar you are trying to integrate with. The steps to grab this value can be found under the Google Calendar Vendor section of this page.</p>	
API Authentication	<p>Select one of the following options:</p> <ul style="list-style-type: none"> <li>• No Auth</li> <li>• Basic Auth</li> <li>• API Key</li> <li>• Bearer token</li> <li>• OAuth Using User App Authentication – select an OAuth integration profile (from the Integration Profiles configured in App Settings) and choose where the access token should be added, Header or URL.</li> <li>• OAUTH Using Client Credentials – select this if you are using a preliminary token call to get the access token.</li> </ul>	Yes		<p>For Public Google Calendars, an API Key is required. The Query Param Key is the actual string "key", but without the quotes. The Query Param Value comes from completing the prerequisites for this vendor. The steps to grab this value can be found under the <a href="#">Google Calendar Vendor</a> section of this page.</p>	
<b>Timezone Configuration</b>					
Time Zone Configuration Option	Sets how the date should be handled that is returned from the API	Yes	Drop-down	ISO Standards	
Select	If you selected <i>Single</i>	Yes	Drop-	UTC	

Configuration Option	Description	Mandatory	Data Type	Default	Example
Timezone	Timezone for the <b>Timezone Configuration</b> option, this field specifies which timezone to use		down		
Field Name	If you selected <b>Multiple Timezones</b> for the <b>Timezone Configuration</b> option, then this field will specify which attribute in the response indicates the location	Yes	String		
Field Value	If you selected <b>Multiple Timezones</b> for the <b>Timezone Configuration</b> option, then this field will specify what value should indicate the specific timezone	Yes	String		
Timezone	If you selected <b>Multiple Timezones</b> for the <b>Timezone Configuration</b> option, then this field will specify what timezone should be used	Yes	Drop-down		
<b>General</b>					
Use Location URL?	If this is checked, the app uses the location URL specified in the PI data feed, over the location reference value (used to deep link to a position within the maps component)	No	Checkbox		
<b>Import/Export Configuration</b>					
Export	Creates a JSON file with the product integration configuration	No			
Import	Use this option to load configuration information from JSON of an exported product integration				

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## Configurations for Microsoft Graph API Vendor

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### Note

- This vendor supports events with multiple locations. Starting July 2025, campusM will support up to 4 locations per event from this vendor.
  - Only the Default Calendar defined for each user will be displayed in campusM.
- 

The following table describes the configuration options available for the Microsoft Graph API vendor:

Configuration Option	Description	Mandatory	Data Type	Default	Example
Enable Product Integration	Select to enable the product integration on the user's campusM app.	No			
Product Integration Description	A description of the product integration for internal use	Yes			
Vendor Name	Select MS Graph APIs	Yes			
<b>Microsoft Graph APIs Configuration</b>					
Delimiter	The separator between the different roles returned in the <code>displayName</code> field. For example, in the following response, the delimiter is a hyphen (-):  <code>displayName: US-DC-FAC</code>	No	One of the following: <ul style="list-style-type: none"><li>-</li><li>/</li><li>;</li><li>,</li><li>No delimiter</li></ul>	No delimiter	
Tenant	The tenant value in the path of the request can be used to control who can sign into the application. The allowed values are common for both Microsoft accounts and work or school accounts, organizations for work or school accounts only, consumers for Microsoft accounts only, and tenant identifiers such as the tenant ID	Yes	String		
Client ID	The Application ID that the registration portal assigned your app	Yes	String		6731..- ..6914391e
Client Secret	The application secret that you created in the app registration portal for your app. It should not be used in a native app, because client secrets cannot be reliably stored on devices. It is required for Web apps and Web APIs that have the ability to store the client secret securely on the server side	Yes	String		
Grant Type	Must be <code>client_credentials</code> for the authorization code flow	Yes	String		<code>client_credentials</code>
Scope	The scopes requested in this leg must be equivalent to or a subset of the scopes requested in the first (authorization) leg. If the scopes specified in this request span multiple resource servers, then the v2.0 endpoint returns a token for the resource specified in the first scope	Yes	String		<a href="https://graph.microsoft.com/.default">https://graph.microsoft.com/.default</a>
<b>User Input Identifier</b>					

Configuration Option	Description	Mandatory	Data Type	Default	Example
Parameter Input Option	User input identifier for MemberOf API	Yes	Input options		username
Constant Value	Enter the constant value				

## Getting Microsoft Calendar Event via campusM API with Sample GetTimetableMicrosoft Service Request

The request URL should be as follows:

<https://manual-qa.campusm.exlibrisgroup.com/addons/services/CampusMService/retrieveCalendar?username=<username>&password=<password>&UserIdentifier=<UserIdentifier>&calType=<calType>&start=<start>&end=<end>>

For example:

<https://manual-qa.campusm.exlibrisgroup.com/addons/services/CampusMService/retrieveCalendar?username=admin&password=<password>&UserIdentifier=954c9c86-1522-4757-b8aa-adb5bc1b782b&calType=testMSgraph&start=2023-08-01T09:00:00&end=2023-08-10T09:00:00>

### Note

URL password, orgCode and password should be provided by your Ex Libris project or support contact by opening a CRM Salesforce request.

```

<ns1:retrieveCalendarResponse xmlns:ns1="http://campusm.gw.com/campusm">
  <ns1:calendar>
    <ns1:calitem>
      <ns1:eventRef>AAMKADQzYzE8OTlhLWl1bmYtNDUxNi1hYjN2LTJmOTYwYmlyYTEyNmBGAAAAAABedYbF0HBjTf81p7XjIQf7Bw86J986Q3LyTyq87ywdz
      <ns1:desc>test / ns1:desc1
      <ns1:calDate>2023-08-03T15:00:00+00:00 / ns1:calDate
      <ns1:start>2023-08-03T15:00:00+00:00 / ns1:start
      <ns1:end>2023-08-03T15:30:00+00:00 / ns1:end
      <ns1:attendanceExclude>true / ns1:attendanceExclude
    </ns1:calitem>
    <ns1:calitem>
      <ns1:eventRef>AAMKADQzYzE8OTlhLWl1bmYtNDUxNi1hYjN2LTJmOTYwYmlyYTEyNmBGAAAAAABedYbF0HBjTf81p7XjIQf7Bw86J986Q3LyTyq87ywdz
      <ns1:desc>test / ns1:desc1
      <ns1:calDate>2023-08-15T15:00:00+00:00 / ns1:calDate
      <ns1:start>2023-08-15T15:00:00+00:00 / ns1:start
      <ns1:end>2023-08-15T15:30:00+00:00 / ns1:end
      <ns1:attendanceExclude>true / ns1:attendanceExclude
    </ns1:calitem>
    <ns1:calitem>
      <ns1:eventRef>AAMKADQzYzE8OTlhLWl1bmYtNDUxNi1hYjN2LTJmOTYwYmlyYTEyNmBGAAAAAABedYbF0HBjTf81p7XjIQf7Bw86J986Q3LyTyq87ywdz
      <ns1:desc>timetabletest1 / ns1:desc1
      <ns1:calDate>2023-08-29T09:00:00+00:00 / ns1:calDate
      <ns1:start>2023-08-29T09:00:00+00:00 / ns1:start
      <ns1:end>2023-08-29T09:30:00+00:00 / ns1:end
      <ns1:attendanceExclude>true / ns1:attendanceExclude
    </ns1:calitem>
  </ns1:calendar>
</ns1:retrieveCalendarResponse>

```