



blackbaud®  
**DEVELOPERS’  
CONFERENCE**  
June 15–17, 2021

# Using the Blackbaud Award Management™ APIs with Blackbaud CRM™

HOT TOPIC MEDLEY TRACK

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**JEFF BAUER**

*Session Host: Scott Parrish*



# Customization of Blackbaud Solutions

As a Blackbaud customer, your Authorized Support Contacts retain the responsibility for providing internal support for Customizations of your Blackbaud solutions by:

- Providing direct support to answer questions regarding Subscription functionality, internal business practices, and troubleshooting processes to Your Non-Authorized Users
- Providing direct support to answer questions regarding Customization specifications, features, intended usage, and Error correction and troubleshooting processes to Your Non-Authorized Users



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## Florida State University

- Public university in Tallahassee, FL
- 35K full time students, 43K full/part time

## FSU Foundation

- \$574M endowment, \$866M total assets
- BBCRM/BBIS SP26, on-prem
- 5 person developer team (manager, 4 devs)
- Michael Eudy wrote this integration between BAM and BBCRM



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- FSU went live with Academic Works before it was integrated into BBCRM
- We needed to update students in CRM as they get awarded scholarships
- Now known as Blackbaud Award Management (BAM)



FLORIDA STATE UNIVERSITY  
FINDING SCHOLARSHIPS FOR YOU

Sign In


- ▼ Opportunities
- Donors

## All Opportunities

Show Filters

Welcome to FS4U – Finding Scholarships for You, Florida State University’s Scholarship Opportunities homepage!

Florida State University awards numerous scholarships each academic year through the fundraising efforts of the Florida State University Foundation and the generosity of private donors. Scholarship award amounts vary and are often awarded based on several factors including, but not limited to, demonstrated academic success, donor-stipulated criteria and financial need.

 You won't be able to apply or be automatically matched to any opportunities until you [complete your general application](#).

### Application Progress

General Application

### Recommended Opportunities

Show Filters


**PLEASE NOTE:** Based on your General Application, below are scholarships for which you may be eligible. Keep in mind that **“Recommended”** does not constitute qualified. The system will identify you from your student record and match you to potential opportunities. Further review of each opportunity will be necessary to ascertain if you meet all requirements. Next to each recommended opportunity, click **“Apply”** to review additional criteria and questions. If you are qualified, answer questions specific to each recommended scholarship, then click **“Finish and Submit.”**

If you have questions concerning these opportunities, please contact the academic college or unit who administers the opportunity. A complete list of contacts can be found [here](#).

Award	Name	Actions
Varies	<b><u>FSU-NYC September 11 Scholarship Fund</u></b> Recipient must be a student who is a relative or a direct descendant of an individual, first responder, police officer, firefighter, medical rescue...	None ⓘ

Varies	<b><u>Seminole Club of Clay County Foundation Endowment for Leonard Voyles</u></b> Recipient must be a full-time student who is a resident of Clay County, FL whose parents are currently members in good standing of the Seminole...	None ⓘ
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- 
- Students, academic departments, and letters of recommendation all interact with BAM using university identity
  - We wrote a program, “Academic Works Importer” (**AWI**) to automate the award process in CRM




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Goals Donor Information Purpose Details Hierarchies Financial Information **Recipients** Naming Opportunities Stewardship Documentation Related Staff Att

**Recipients** (8) + Add 🔄 More ▾

Name	Award date ▾	Award am...	Type	Total disb...	Last disburs...	Scholarship term	Start date	End date
	9/1/2020	\$1,000.00				Fall 20	9/1/2020	12/31/2020

 Edit  Delete

Status: Published name:

Comments: Academic Works ID: 679653

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Educational institution:



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- This award was imported via the AWI program, which plugged in the award date, amount, term the scholarship got paid out, and start/end dates from BAM via the REST API
- Note the “Academic Works ID: 679653” in the “Comments” field, in case somebody has to research this in BAM

Name	Date awarded	Amount received
Total funds (4)		\$2,000.00
Hayden Family Scholarship for First Generation Students	1/1/2021	\$500.00
Hayden Family Scholarship for First Generation Students	9/1/2020	\$500.00
Hayden Family Scholarship for First Generation Students	1/1/2020	\$500.00
Hayden Family Scholarship for First Generation Students	9/1/2019	\$500.00



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- This is two separate \$1,000 awards from BAM, distributed across two semesters.
- AWI split the awards evenly between the semesters (this was the customer's business rule; the term is in the form "Fall21/Spring22")
- It can also adjust the award, if it gets adjusted later on in BAM

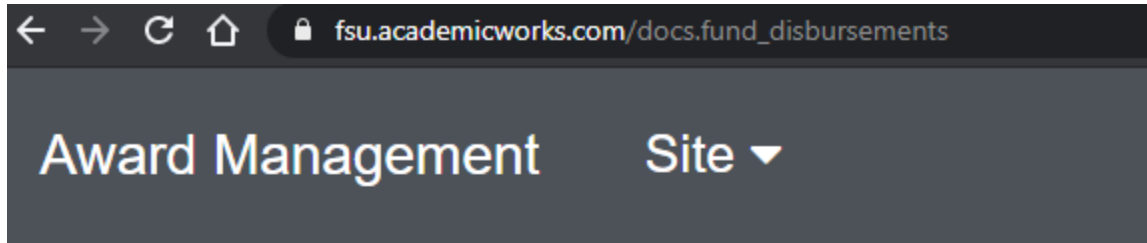
# FS4U Pending Scholarships

FundCode	OpportunityName	Category	FundCode	OMNI ID
F06717	Mildred Overstaple	Awarded		
F06717	Mildred Overstaple	Cancelled		
F06770	Ben Hill Griffin	Drafted		
F06770	Ben Hill Griffin	In Process		
F06770	Ben Hill Griffin	Pending Payroll Review		
F06770	Ben Hill Griffin	Requested		
F06770	Ben Hill Griffin	Returned to Foundation		
F06770	Ben Hill Griffin	Stewardship Pending		
F06770	Ben Hill Griffin	Submitted		
F06844	Westcott Endowed Trust Fund	Uploaded to FSU		
F06844	Westcott Endowed Trust Fund		149	200571748 Rumenik Madison Drafted (Automatch) Drafted 20200101 Spring 20 064900
F06844	Westcott Endowed Trust Fund		149	200637414 Mason Ansley Drafted (Automatch) Drafted 20190901 Fall 19 064900
F06844	Westcott Endowed Trust Fund		149	200637414 Mason Ansley Drafted (Automatch) Drafted 20200101 Spring 20 064900
F06889	Dot Tucker Endowed Scholarship Fund		155	200569682 Nichols Lauren Drafted (Apply) Drafted 20190901 Fall 19 064900
F06889	Dot Tucker Endowed Scholarship Fund		155	200569682 Nichols Lauren Drafted (Apply) Drafted 20200101 Spring 20 064900
F06781	Severiano Jorge Endowed Scholarship Fund		9408	200510330 Mallory Fallon Drafted (Automatch) Requested 20200901 Fall 20 065900

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## API Documentation

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- Automating Applicant Data Imports with cURL
- Applicant Data Imports Best Practices
- Applications API
- Fund Disbursements v1
- Fund Disbursements Updater v0
- Remote Identity
- Users Export API

## Fund Disbursements API v1

### Overview

This API allows you to query the fund disbursements in the system.

This describes the resources that make up the official Blackbaud Award Management Fund Disbursements API v1.

If you are transitioning from Version 0 to Version 1 of the API, please read the information for [updating from v0 to v1](#).

### Table of Contents

1. Endpoints
2. Authentication
3. Method: Field Info
4. Method: Field Info: Details
5. Method: Disbursements
6. Automating the Process
7. Troubleshooting cURL
8. Updating from v0 to v1
9. Additional Resources



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## Export Details

Export Token

[REDACTED]

[Generate a New Token](#)

Whitelisted IP Addresses

146.201.89.37  
146.201.89.138

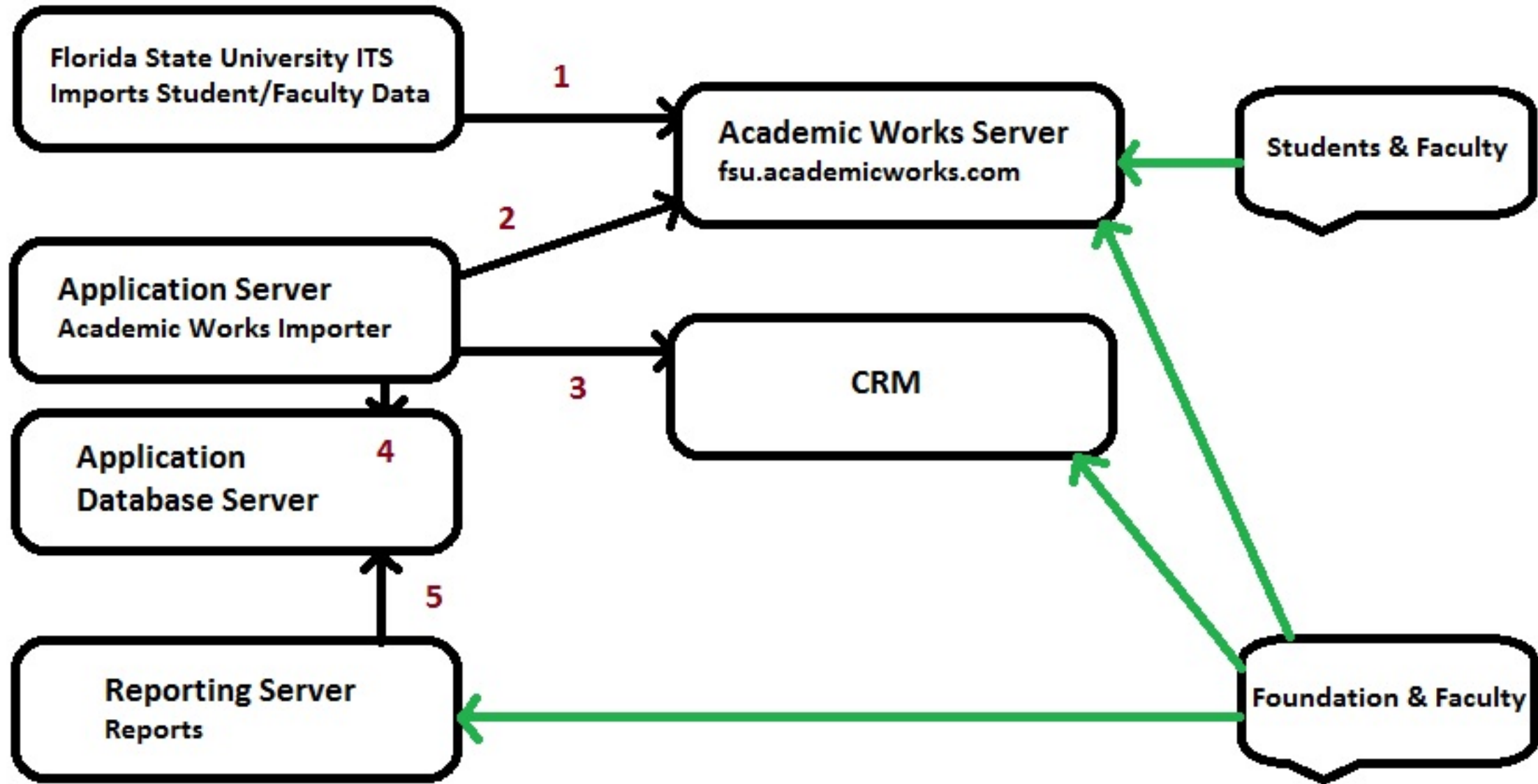
Documentation [API Documentation](#)



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[https://your\\_domain.academicworks.com/api/v1/disbursements.xml?token=your\\_token](https://your_domain.academicworks.com/api/v1/disbursements.xml?token=your_token)

# Florida State University Foundation - High Level Academic Works & CRM Integration System Overview





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1. Use BAM REST API to get all disbursement records
2. Load all the disbursement info into a reporting table (this includes awards not actually awarded yet). We have some web reports that use this data (e.g., earlier slide)
3. Pull out all of the specific categories of disbursements and put them on the student's CRM record under "Funds received"
  1. We match the student record in CRM using the Oracle/PeopleSoft EMPLID stored as a custom field in BAM with the EMPLID stored in CRM as an alternate lookup ID
  2. If the person can't be found in CRM we email our Data Management team (this is rare as we import incoming and current students every semester)
4. If award is already on record we check to see if anything's changed
  1. If so, delete and re-add the award
  2. Else, if not on record, add it

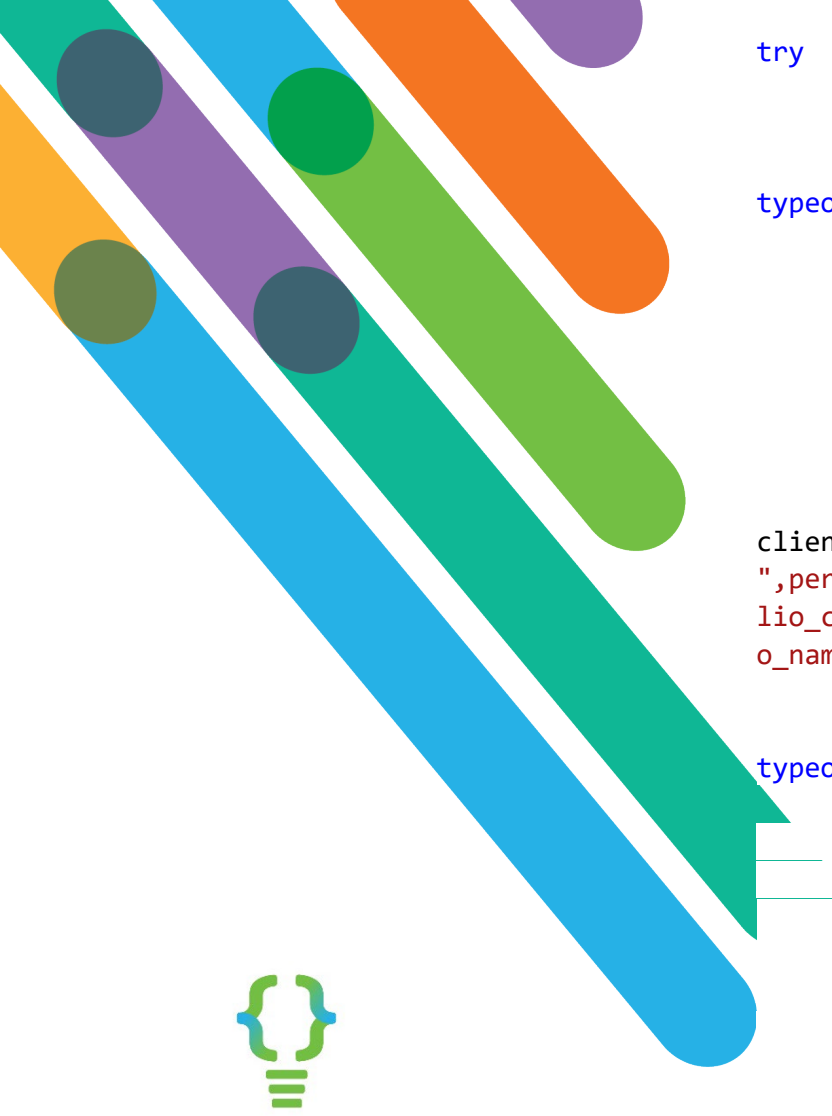


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```
public static List<Disbursement> GetDisbursements()
{
    // Create our main list of disbursement objects so we can track them.
    List<Disbursement> disbursements = new List<Disbursement> { };

    using (var client = new WebClient())
    {
        int page = 1;

        string result =
        client.DownloadString("https://fsu.academicworks.com/api/v1/disbursements.json?page=" + page +
        ",per_page=500&fields=id,category_name,award_period_name,disbursement_amount,last_categorized_at,user_uid,portfolio_code,user_display_name,user_email,scopes,scope_ids,form_field_10042,form_field_10040,opportunity_id,portfolio_name,initial_application_category_name,opportunity_season,categorized_at&token=" + academicWorksToken);
    }
}
```



try

```
{
    // Get the initial page
    disbursements = (List<Disbursement>)JsonConvert.DeserializeObject(result,
typeof(List<Disbursement>));
    // Increment the page number so we can check if there are more
    // records.
    page = page + 1;
    // Loop through the pages while there are results and combine the
    // lists into one (using the AddRange function on a list).
    // When there are no results the return string will be "[ ]".
    // *Note: We increment the 'page' url variable to get the next page.
    while ("[]" != (result =
client.DownloadString("https://fsu.academicworks.com/api/v1/disbursements.json?page=" + page +
",per_page=500&fields=id,category_name,award_period_name,disbursement_amount,last_categorized_at,user_uid,portfo
lio_code,user_display_name,user_email,scopes,scope_ids,form_field_10042,form_field_10040,opportunity_id,portfoli
o_name,initial_application_category_name,opportunity_season,categorized_at&token=" + academicWorksToken)))
    {
        disbursements.AddRange((List<Disbursement>)JsonConvert.DeserializeObject(result,
typeof(List<Disbursement>)));
        page = page + 1;
    }
    return disbursements;
}
catch (Exception e)
{
    // If we do not load any results, or partial results, the program
    // will process. We run everything through a control record table.
}
}
return disbursements;
}
```



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BAM field	CRM field
User_uid	<i>EMPLID (alternate lookupID)</i>
Portfolio_name	OpportunityName
Disbursement_amount	<i>Amount on recipient award</i>
Portfolio_code	<i>FundCode</i>
Opportunity_id	OpportunityID
ScholarshipTermID1 or 2	ScholarshipTermID
Form_field_10040	FirstName
Form_field_10042	LastName
Id	FS4UIdentifier
Category_name	<i>Category</i>
Orig_last_categorized_at	<i>DateCategoryChanged</i>
Initial_application_category_name	InitialApplicationCategory
Categorized_at	Categorized_at
Opportunity_season	Opportunity_season



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- FSU\_DB\_CAMPUS
  - Database Diagrams
  - Tables (filtered)
    - System Tables
    - FileTables
    - AcademicWorks.Categories**
    - AcademicWorks.Scholarships
    - AcademicWorks.Scholarships\_New
    - AcademicWorks.Scholarships\_NewCols
    - AcademicWorks.ScholarshipUpdates

*AWI* uses a custom table that contains all of the categories found in BAM with a flag set for the categories in our process flow that we want to process and post into CRM as a disbursement record.



CRM - Academic Works Import	Ready	At 6:00 PM every Monday, Tuesday, Wednesday, Thursday, Friday of every week, starting 10/23/2019
CRM Prod Role Synch	Ready	Multiple triggers defined
CRM - Offsite Archive	Ready	At 4:30 AM every day
Jeff Bauer (jbauer@foundation.fsu.edu) is signed in		Multiple triggers defined
Data Cleanup - CRM Phones	Ready	
Data Cleanup - CRM Prospect Plans	Ready	At 5:20 PM on 11/24/2015
Data Cleanup - CRM VAM Name Format	Ready	
Data Cleanup - FormatNamesSingles	Ready	At 7:30 PM every day
Data Cleanup-Format Names	Ready	At 6:45 PM every day
DataCache AD Sync	Ready	At 7:30 AM every day
Evertrue-CRM Interaction Imports	Ready	At 8:00 AM every day
Evertrue-Test-Path	Disabled	At 6:45 AM every day
Failed Task Alerts	Ready	On event - Log: Microsoft-Windows-TaskScheduler/Operational, Source: Microsoft-Windows-TaskScheduler, EventID: 10000
Fnd.Forms.RequestApprovalReminder	Ready	At 9:00 AM every Monday of every week, starting 8/25/2017
FNDAPPS to Offsite Archive	Disabled	At 2:00 AM every day
GeocodeDataCache	Ready	At 5:00 AM every day

General Triggers Actions Conditions Settings History

When you create a task, you must specify the action that will occur when your task starts. To change these actions, open the task property pages using the Properties co

Action	Details
Start a program	D:\consoleapps\AcademicWorksImporter\Fnd.Jobs.AcademicWorksImport.exe



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```
Fnd.Jobs.AcademicWorksImport.exe (running as fnd-adir\svc-awi)
ool size=8;
appFxUrlBaseString:
https://crm.foundation.fsu.edu/bbappfx/appfxwebservice.asmx
appFxDatabaseNameString:
BBInfinity
appFxApplicationNameString:
Academic Works Import
appAlertsEmail:
appalerts@foundation.fsu.edu
mailServer:
mailrelay.fsu.edu
dataManagementEmail:
meudy@foundation.fsu.edu
*****
*****
*****
```



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Application Users  
**FND-ADIR\SVC-AWI - Application User**

Display name:	SVC-AWI	Is system administrator:	No
Linked to constituent:		Can customize home page:	No
Site:		Is active:	Yes

System Roles | Permissions | Business Process Ownership | Tasks | Features | Code Tak

**System roles (2)** + Add | More ▾

Name ▲	Description
Designations and Purposes	
FND Apps	

We use principle of least privilege for our service accounts by carving out specific CRM system roles





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## Statistics about AWI:

- Took around 80 hours of developer time, including research, design, testing, deployment, bug fixes, logic updates, etc.
- Live since October of 2019
- Runs daily
- Processes ~12K disbursement records from BAM for ~6k student records in CRM across ~1K funds
- Run time is from 5 to 15 minutes, depending on when awards drop en masse



## Comparison of AWI to OOB BAM → BBCRM integration

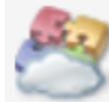
- We match on EMPLID and email list of missing students to our data management team
- BB's solution matches on student email address from BAM
- Both match based on designation/fund name to apply the award
- We manage the BAM API key internally into the program (actually a value sitting in an app settings table for easy modification)
- BB's solution has a place in CRM to store the BAM API key:

### Award Management

 Award Management configuration

 Award Management integration

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## Award Management Configuration

**Award Management configuration**



Edit configuration



Delete configuration

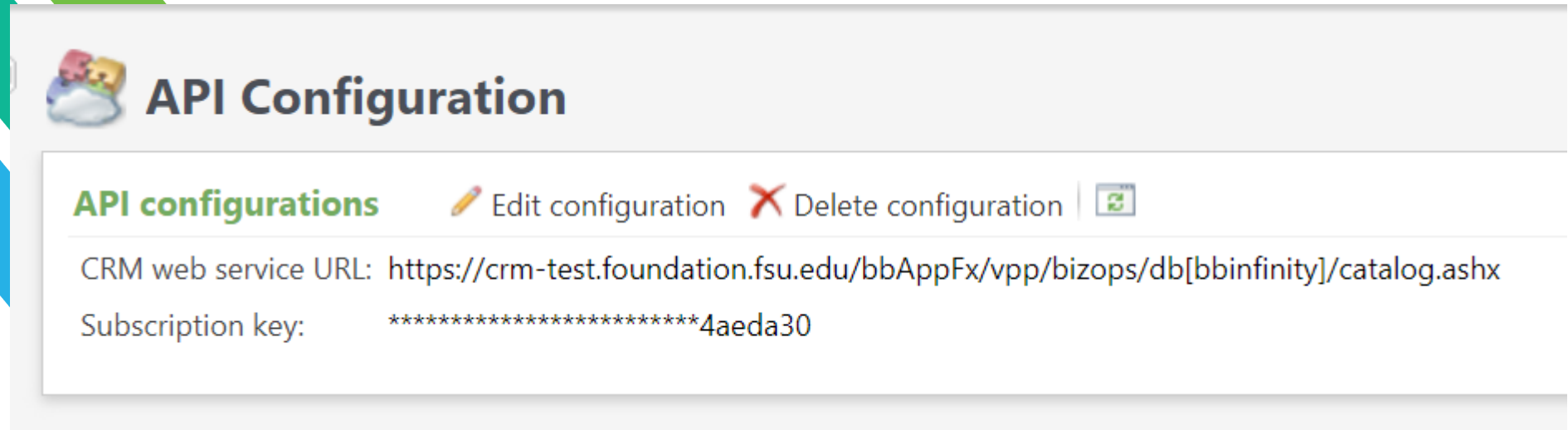


Award Management token: `thereisnowayiamgoingtogivethistoyousotherenanabooboo`

Award Management URL: [fsu.academicworks.com/](https://fsu.academicworks.com/)

Comparison of AWI to OOB BAM → BBCRM integration

- BB's solution also requires connecting to BB SKY API, for on-prem or cloud-based CRM instances:



The screenshot shows a user interface for API Configuration. At the top left is a small icon of a globe with colorful dots. The main title is "API Configuration" in a bold, dark font. Below the title, there are two action buttons: "Edit configuration" with a pencil icon and "Delete configuration" with a red 'X' icon. To the right of these buttons is a small square icon with a green 'E'. Below the buttons, the text "API configurations" is displayed in a green font. Underneath, there are two lines of text: "CRM web service URL: https://crm-test.foundation.fsu.edu/bbAppFx/vpp/bizops/db[bbinfinity]/catalog.ashx" and "Subscription key: \*\*\*\*\*4aeda30".



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## Profile

Change password     Change account information

**Email** jbauer@foundation.fsu.edu  
**First name** Jeff  
**Last name** Bauer

## Your subscriptions

 Analytics reports

Subscription details	Product	State	Action
<b>Subscription name</b> CRM API <b>Started on</b> 10/31/2019 <b>Primary key</b> XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX <a href="#">Show</a>   <a href="#">Regenerate</a> <b>Secondary key</b> XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX <a href="#">Show</a>   <a href="#">Regenerate</a>	CRM API	Active	<a href="#">✕ Cancel</a>

Comparison of AWI to OOB  
BAM → BBCRM integration

- ...in addition to subscribing to the CRM API:

Excellent YouTube showing how to set this all up:

<https://www.youtube.com/watch?v=l62Aih8maB4>





## Award Management Integration

Award Management integration processes (3) Add More ▾

Name	Description	Integration type
Full Award Management to Blackbaud CRM	Full Award Management to Blackbaud	Full
Start process    Edit    Delete		
Incremental Award Management to Blackbaud CRM	Incremental Award Management to CRM	Incremental
test	test	Full

### Edit Award Management integration process

Name:

Description:

Integration type:  ▾

Help

Save

Cancel

#





# Award Management Integration

Name: test

Description: test

Integration type: Full

Recent status

History

Job schedules

## Recent status



Exceptions



Status:  Did not finish

Status message: An error occurred while running the Award Management Integration. Please contact your system administrator.

Started by: FND-ADIR\jbauer

Started: 5/14/2021 2:17:26 PM

Ended: 5/14/2021 2:18:28 PM

Duration: 1 minute 2 seconds

Records successfully processed: 0

Number of exceptions: 0

Total records processed: 0

Server name: CRM-TEST2



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## Award Management Integration

Name: 2019 Awards

Description:

Integration type: Full

Recent status

History

Job schedules

Recent status

Exceptions

Status:  Completed with exceptions

Status message: Completed with exceptions

Started by: BBCRMDEMO\demoadmin

Started: 10/28/2019 12:24:07 PM

Ended: 10/28/2019 12:25:07 PM

Duration: 1 minute

Records successfully processed: 48

Number of exceptions: 14

Total records processed: 62

Server name: BBCRMDEMO

## Award Management Integration Exceptions

**Status:** ⚠ Completed with exceptions  
**Status message:** Completed with exceptions  
**Started by:** BBCRMDEMO\demoadmin  
**Started:** 10/28/2019 4:24:07 PM  
**Ended:** 10/28/2019 4:25:07 PM  
**Duration:** 1 minute  
**Records successfully processed:** 48  
**Number of exceptions:** 14  
**Total records processed:** 62  
**Server name:** BBCRMDEMO

### Exceptions (14) 📄 | More ▾

Award Management ID	Constituent name	Constituent email address	Fund name	Award accepted	Exception message	Exception time
3662	Samantha Thomas	ouengineer@gmail.com	Success Scholarship	Yes	Multiple constituents found with ...	10/28/2019 4:24:07 PM
3651	Samantha Thomas	ouengineer@gmail.com	Success Scholarship	Yes	Multiple constituents found with ...	10/28/2019 4:24:07 PM
3666	Samantha Thomas	ouengineer@gmail.com	Success Scholarship	Yes	Multiple constituents found with ...	10/28/2019 4:24:07 PM
3683	Roberta Thomas	matt.thomas@academicworks.com	Success Scholarship	Yes	No constituent found with email a...	10/28/2019 4:24:07 PM
3687	Roberta Thomas	matt.thomas@academicworks.com	Success Scholarship	Yes	No constituent found with email a...	10/28/2019 4:24:07 PM
3674	Roberta Thomas	matt.thomas@academicworks.com	Success Scholarship	Yes	No constituent found with email a...	10/28/2019 4:24:07 PM
3934	Paul Shafer	pshafer@academicworks.com	Lamar Family Endowed Scholarship	Yes	Multiple fundraising purposes fou...	10/28/2019 4:24:07 PM
3822	Lindsey Ohls	lohls@academicworks.com	Lamar Family Endowed Scholarship	Yes	Multiple fundraising purposes fou...	10/28/2019 4:24:07 PM
3804	Kevin Bresser	kevin.bresser@academicworks.com	Lamar Family Endowed Scholarship	Yes	Multiple fundraising purposes fou...	10/28/2019 4:24:07 PM
3847	Jeff DeStefano	jfox@academicworks.com	Lamar Family Endowed Scholarship	Yes	Multiple fundraising purposes fou...	10/28/2019 4:24:07 PM
3830	Graham Dunlap	gdunlap@academicworks.com	Lamar Family Endowed Scholarship	Yes	Multiple fundraising purposes fou...	10/28/2019 4:24:07 PM
3836	Graham Dunlap	gdunlap@academicworks.com	Lamar Family Endowed Scholarship	Yes	Multiple fundraising purposes fou...	10/28/2019 4:24:07 PM
3813	Bo Kerin	bkerin@academicworks.com	Lamar Family Endowed Scholarship	Yes	Multiple fundraising purposes fou...	10/28/2019 4:24:07 PM
3717	Bo Kerin	bkerin@academicworks.com	The Ernest S. Biczak, MD '77, Endowed Scholarship	Yes	Error finding fundraising purpose	10/28/2019 4:24:07 PM

## Comparison of AWI to OOB BAM → BBCRM integration

- FSU has been unable to get this integration to successfully pull data from BAM to a test CRM
- When configured properly it creates an exception output that can be used to debug awards coming over from BAM to CRM
- We have an open ticket with BB to resolve
- Gotta be something we just don't have set right, unfortunately
- Wish there were more detail error messages somewhere (Application log in Windows event viewer, error table columns, etc.)
- Blackbaud should provide custom mapping of identity field instead of hard coding to email address
- Bill Walsh quote: *"The Award Management utilizes a Blackbaud Azure Cloud based service that we are providing free of charge to Blackbaud CRM customers (on prem, hosted, and Azure cloud based). It does utilize compute power in our data center to perform SOAP to REST conversions, and therefore requires that your instance of BBCRM be able to communicate with our cloud service."*
- Our code is available upon request (although the BB integration may suit your needs)



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Thank you!